STATE OF IOWA
MASTER AGREEMENT

EFFECTIVE BEGIN DATE: 03-01-2007
EXPIRATION DATE: 02-29-2012

BUYER : ASHLEY SUPER
ashley.super@iowa.gov
515-281-7073

FOB

PAYMENT TERMS (%): **DAYS:**

VENDOR:

DEDE Inc
5250 N River Blvd NE

Cedar Rapids, IA 52411
USA

VENDOR CONTACT:

Vicki Rocho
PHONE: 319-378-8455 **EXT:**
EMAIL: vicki.rocho@genovatech.com
VENDOR #: 42146629801

DESCRIPTION OF ITEMS CONTRACTED

CONSULTING, IT
SEE ATTACHED DOCUMENTS
.
aka: Genova Technologies

Contract to furnish IT consulting and staff augmentation pursuant to the specifications, terms and conditions of sealed bid #BD80200S102 on file with the Department Of Administrative Services, GSE Purchasing Division, Hoover Building, Level A, Des Moines, Iowa 50319-0105.

For complete instructions on how to use this contract, see the attached file regarding rules or contact The Department of Administrative Services, General Services Enterprise.

This contract is for all nine ITQ service categories.

Contact:
Vicki Rocho / Ann Fleckenstein
Ph: 319-378-8455
Fax: 319-378-8457
Email: ann.fleckenstein@genovatech.com

PCQT# _____
Rating: 8.08

RENEWAL PERIODS
FROM 03-01-2012 **TO** 02-28-2014
FROM 03-01-2014 **TO** 02-29-2016

THRESHOLDS
MINIMUM ORDER AMOUNT:
MAXIMUM ORDER AMOUNT:
NOT TO EXCEED AMOUNT:

AUTHORIZED DEPARTMENT
ALL
SUB Political Sub-divisions

TOTAL **$0.00**

VENDOR: _____

APPROVED BY: _____

THIS MA IS SUBJECT TO THE TERMS AND CONDITIONS ATTACHED HERETO. PLEASE SEE ATTACHMENTS FOR FURTHER DESCRIPTIONS.

LINE NO.	QUANTITY / SERVICE DATES UNIT	COMMODITY / DESCRIPTION	UNIT COST / PRICE OF SERVICE
1	0.00000	91829	$0.000000
			$0.000000

Computer Software Consulting
.
aka: Genova Technologies

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TERMS AND CONDITIONS

Incorporation
The Request for Proposal and/or bid documents for this project and the vendor's proposal in response to the RFP or Bid together with any clarifications, attachments, appendices, or amendments of the State or the Vendor are incorporated into this Contract by reference as if fully set forth in this Contract.

Remedies upon Default
In any case where the vendor has failed to deliver or has delivered non-conforming goods and/or services, the State shall provide a cure notice. The notice to cure shall state the maximum length of time the vendor has to cure. If after the time period stated in the notice to cure has passed, the vendor continues to be in default, the State may procure goods and/or services in substitution from another source and charge the difference between the contracted price and the market price to the defaulting vendor. The State's Attorney General shall be requested to make collection from the defaulting vendor.

Force Majeure
Force majeure includes acts of God, war, civil disturbance and any other causes which are beyond the control and anticipation of the party affected and which, by the exercise of reasonable diligence, the party was unable to anticipate or prevent. These provisions of force majeure also apply to subcontractors or suppliers of the Vendor. Force majeure does not include financial difficulties of the Vendor or any associated company of the Vendor, or claims or court orders that restrict the Vendor's ability to deliver the goods or services contemplated by this Agreement. Neither the Vendor nor the State shall be liable to the other for any delay or failure of performance of this Agreement caused by a force majeure, and not as a result of the fault or negligence of a party.

Subcontractors
The successful vendor shall be responsible for all acts and performance of any subcontractor or secondary supplier that the successful vendor may engage for the completion of any contract with the State. A delay that results from a subcontractor's conduct, negligence or failure to perform shall not exempt the vendor from default remedies. The successful vendor shall be responsible for payment to all subcontractors and all other third parties.

Termination-Non-Appropriation
Notwithstanding any other provision of this contract, if funds anticipated for the continued fulfillment of this contract are at any time not forthcoming or insufficient, either through the failure of the State to appropriate funds, discontinuance or material alteration of the program for which funds were provided, then the State shall have the right to terminate this contract without penalty by giving not less than thirty (30) days written notice documenting the lack of funding, discontinuance or program alteration.

Immunity of State/Fed Agencies
The vendor shall defend and hold harmless the State and Federal funding source for the State of Iowa from liability arising from the vendor's performance of this contract and the vendor's activities with subcontracted and all other third parties.

Assignment
Vendors may not assign contracts or purchase orders to any party (including financial institutions) without written permission of the General Services Enterprise - Purchasing.

Anti-Trust Assignment
For good cause and as consideration for executing this purchase order, the vendor, through its duly authorized agent, conveys, sells, assigns, and transfers to the State of Iowa all rights, title and interest in and to all causes of action it may now or hereafter acquire under the anti-trust laws of the United States and the State of Iowa, relating to the particular goods or services purchased or acquired by the State of Iowa pursuant to the using State of Iowa agency.

Delivery and Acceptance
When an award has been made to a vendor and the purchase order issued, deliveries are to be made in the following manner.
A. Deliveries - All deliveries are to be made only to the point specified on the purchase order. If delivery is made to any other point, it shall be the responsibility of the vendor to promptly reship to the correct location. Failure to deliver procured goods on time may result in cancellation of an order or termination of a contract at the option of the State.
B. Delivery Charges - All delivery charges should be to the account of the vendor whenever possible. If not, all delivery charges should be prepaid by vendor and added to the invoice.
C. Notice of Rejection - The nature of any rejections of a shipment, based on apparent deficiencies disclosed by ordinary methods of inspection, will be given by the receiving agency to the vendor and carrier within a reasonable time after delivery of the item, with a copy of this notice to the General Services Enterprise - Purchasing. Notice of latent deficiencies which would make items unsatisfactory for the purpose intended may be given by the State of Iowa at any time after acceptance.

Delivery and Acceptance (cont)
D. Disposition of Rejected item - The vendor must remove at the vendor's expense any item rejected by the State. If the vendor fails to remove that rejected item, the State may dispose of the item by offering the same for sale, deduct any accrued expense and remit the balance to the vendor.
E. Testing After Delivery - Laboratory analysis of an item or other means of testing may be required after delivery. In such cases, vendors will be notified in writing that a special test is being made and that payment will be withheld until completion of the testing process.

Title to Goods
The vendor warrants that the goods purchased hereunder are free from all liens, claims or encumbrances.

Indemnification
To the extent that goods are not manufactured in accordance with the State's design, the vendor shall defend, indemnify and hold harmless the State of Iowa, the State's assignees, and other users of the goods from and against any claim of infringement of any Letter Patent, Trade Names, Trademark, Copyright or Trade Secrets by reason of sale or use of any articles purchased hereunder. The State shall promptly notify the vendor of any such claim.

Nondiscrimination
The vendor is subject to and must comply with all federal and state requirements concerning fair employment and will not discriminate between or among them by reason of race, color, religion, sex, national origin or physical handicap.

Warranty
The vendor expressly warrants that all goods supplied shall be merchantable in accordance with the Uniform Commercial Code, Section 2-314 and the Iowa Code, Section 554.2314.

Taxes

The State of Iowa is exempt from the payment of Iowa sales tax, motor vehicle fuel tax and any other Iowa tax that may be applied to a specified commodity and/or service. Contractors performing construction activities are required to pay state sales tax on the cost of materials. The Iowa Department of Revenue exemption letter will be furnished to a vendor upon request.

Hazardous Material

All packaging, transportation, and handling of hazardous materials shall be in accordance with applicable federal and state regulations including, but not limited to, the Material Safety Data Sheet provision of O.S.H.A. Hazard Communication Standard 29CFR 1910.1200, and Iowa Administrative Code, Chapter 567.

Public Records

The laws of the State of Iowa require procurement records to be made public unless exempted by the Code of Iowa.

Miscellaneous

The terms and provisions of this contract shall be construed in accordance with the laws of the State of Iowa. Any and all litigation or actions commenced in connection with this contract shall be brought in Des Moines, Iowa, in Polk County District Court for the State of Iowa. If however, jurisdiction is not proper in Polk County District Court, the action shall only be brought in the United States District Court for the Southern District or Iowa, Central Division, providing that jurisdiction is proper in that forum. This provision shall not be construed as waiving any immunity to suit or liability, which may be available to the State of Iowa.

If any provision of this contract is held to be invalid or unenforceable, the remainder shall be valid and enforceable.

Records Retention

The vendor shall maintain books, records, and documents which sufficiently and properly document and calculate all charges billed to the State of Iowa throughout the term of this Agreement for a period of at least five (5) years following the date of final payment or completion of any required audit, whichever is later. The vendor shall at, no charge, permit the Auditor of the State of Iowa, or any authorized representative of the State (or where federal funds are involved, the Comptroller General of the United States or any other authorized representative of the United States government) to access and examine, audit, excerpt and transcribe any directly pertinent books, documents, papers, electronic or optically stored and created records, or other records of the vendor relating to orders, invoices, or payments documentation or materials pertaining to this Agreement.

Independent Contractor

The vendor is an independent contractor performing services for the State of Iowa, and as such shall not hold itself out as an employee or agent of the State.

Performance Monitoring

For all service contracts, the requirements of Iowa Code sections 8.47 shall be incorporated into final terms and conditions of the contract.

Confidentiality

Each party may have access to confidential information of the other party to the extent necessary to carry out their responsibilities under the Agreement and Software License Agreement. Such confidential information shall, at all times, remain the property of the party disclosing the confidential information. Each party shall preserve the confidentiality of the confidential information disclosed or furnished by the other party, and shall maintain procedures for safeguarding such confidential information. Each party shall accept responsibility for providing adequate supervision and training to its agents, employees and any approved contractors and subcontractors to ensure compliance with the terms of this Agreement.

Works Made for Hire

All information, reports, studies, flow charts, diagrams, and other tangible and intangible material of any nature, whatsoever, produced by the vendor for delivery to the State during the course of this engagement and all copies of any of the foregoing shall be the sole and exclusive property of the State, and all such material and all copies shall be deemed "works made for hire" of which the State shall be deemed the author.

To the extent that the materials are not deemed "works made for hire", the vendor hereby irrevocably grants, assigns, transfers, and sets over to the State all legal and equitable right, title, and interest of any kind, nature or description in and to the materials and the vendor shall be entitled to make absolutely no use of any of the materials except as may be expressly permitted in this Agreement.

Vendor's Property

Notwitstanding provisions of "works made for hire", the vendor shall own all of its pre-existing methods, techniques, and processes, including software and documentation, that it brings to this engagement and shall own all enhancements to these methods, techniques and processes, including software and documentation, that are developed during the course of this engagement ("Vendor's Property") and (b) the vendor shall have the right to retain copies of all materials referred to in "works made for hire" in its files evidencing its services for the Information Technology Enterprise. The vendor agrees to grant the State/ITE a royalty-free,nonexclusive, nontransferable license to use, duplicate and disclose the Vendor's Property for the purposes contemplated by this Agreement.

November 15, 2006

Ashley Super, Purchasing Agent III
Iowa department of General Services (DGS)
Hoover State Office Building - Level A
Des Moines, IA 50319-0105

Reference: Response to ITQ #BD80200S102, Version 1.0

Dear Ms. Super:

Genova Technologies is pleased to submit this proposal in response to the State's Invitation to Qualify # BD80200S102, Version 1.0. We believe we have complied with all specifications, instructions, and contract items.

Genova is responding to the following categories:

1. Strategy / Vision / Consulting
2. Project Management
3. Design/Planning
4. Developing
5. Testing
6. Implementation
7. Training
8. On-Going Support
9. Administration

Genova affirms that this bid response will be guaranteed for at least 180 days from the date it is received by the State, and that this proposal may be extended beyond that date by mutual agreement.

Please note that these proposals contain proprietary information. The General Contract Information volume contains the requested Dun & Bradstreet Report and each Service Area volume contains confidential rate information. We have included a public version of all documents on CD in the event the State needs to publicize portions of the proposal.

Please let me know if I can be of further assistance to you and your team.

Sincerely

Vicki Rocho

Invitation to Qualify

Genova Technologies
5250 N River Boulevard NE
Cedar Rapids, Iowa 52411
www.genovatech.com

Contact
Ann Fleckenstein
Dir. Business Development
Phone 319-378-8455
Fax 319-378-8457
ann.fleckenstein@genovatech.com

Woman-Owned Small Business

DUNS
92-985-2820

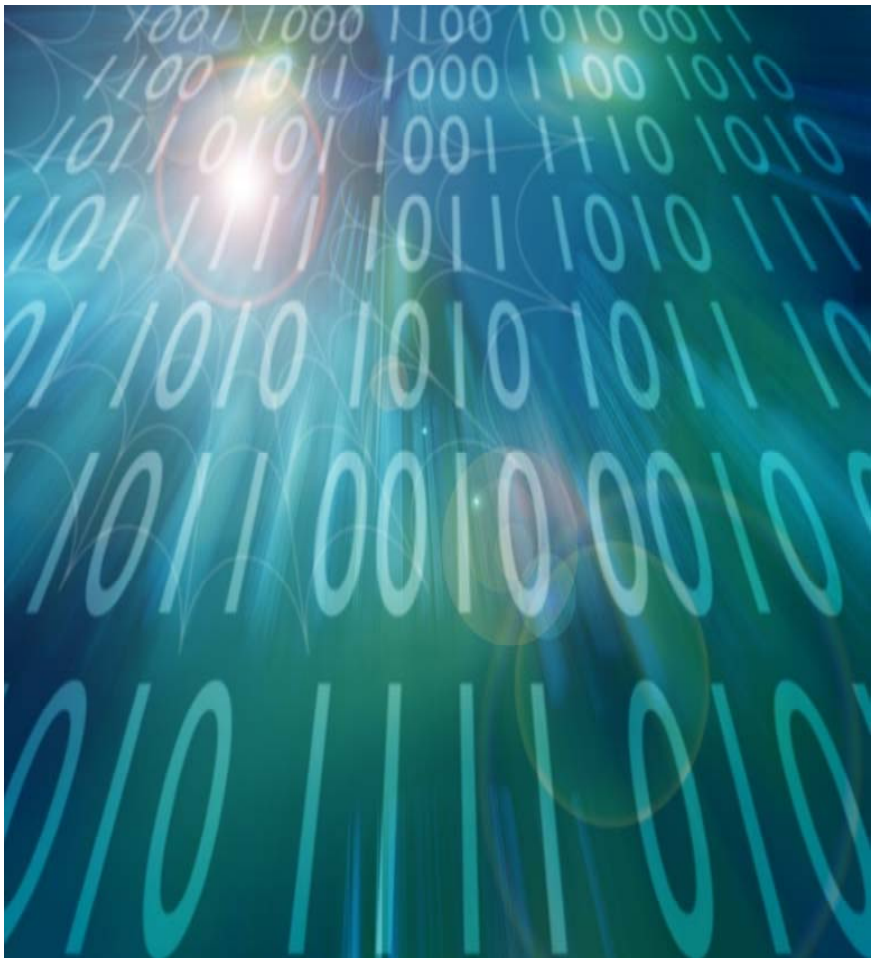
CMS BPA
HHSM-500-2005-00001B

GSA Schedule 70
GSA GS-35F-0303M

NAICS Codes
518210, 541511, 541512, 541519, 54171, 541330, 541611, 611420, 611430

RFP BD80200S102

Administration



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1. PROVIDING RESOURCES

How do you intend to provide the resources required by this ITQ?
Genova has a Resource Planning Team that is responsible for coordinating all resources for current and future projects. The committee meets at least once a week to discuss the progress on existing jobs as well as any potential projects for the future. The Committee utilizes Microsoft Project to organize and track the company's various projects and resources. With this process, Genova has the ability to plan for all projects and resource needs well in advance. This ensures that the company is able to meet all personnel requirements in a timely manner.

2. CONTRACT ADMINISTRATOR

Identify the SP contract administrator and describe the functions that person will perform.
Ann Fleckenstein will act as the contract administrator. Her contact information is as follows: Genova Technologies, 5250 North River Blvd NE, Cedar Rapids, Iowa 52411; (319) 378-8455; ann.fleckenstein@genovatech.com

The contract administrator (CA) will be responsible for the overall performance of the contract in accordance with contractual requirements as well as Genova company policies. The CA will have full responsibility and authority in all areas necessary for the accomplishment of the mission and will be the primary point of contact for business negotiations.

The CA will transition each project over to a Project Manager (PM) who will become the primary point of contact for the technical aspects of the project. The PM will direct staff in areas of cost, schedule, technical performance, impact analysis, software quality assurance, management, project controls, and project administration. Inherent responsibilities include providing and submitting all plans, records, reports, and data to the customer in accordance with Genova policies and contractual requirements. The CA and PM will maintain liaison with State officials regarding the operational and contractual aspects of the project.

3. PROVIDING ADDITIONAL PERSONNEL

Describe how you plan on providing additional personnel if it becomes necessary to properly staff projects.
As discussed in question 1, Genova has a Resource Planning Team that meets regularly coordinate current and future resource needs.

In addition, Genova has an internal Recruiting Department that works closely with Genova's Resource Planning Team to anticipate vacancies and surge requirements in sufficient time to identify replacement or supplemental candidates.

Another approach Genova uses is to partner with organizations and companies that can provide extensive experience or additional personnel that would be a "fit" for the project. While these companies may compete with Genova in some areas, there can be significant benefits to working together as a team. We refer to this relationship as "co-peting". By forming these partnerships, Genova provides our customers with the best possible team to perform the work.

4. ABILITY TO ADDRESS ISSUES

Describe your company's ability to uniquely address problems and issues related to the service category.

Genova's premier differentiator is the ability to quickly and thoroughly document all system and project requirements with its proprietary technique. Genova is able to track each requirement from analysis, to design, development, testing, and documentation. As new requirements or risks are uncovered, their impact to the schedule and/or budget is discussed with the customer. An adaptive lifecycle approach enables Genova to make the necessary adjustments throughout development, resulting in a final project that exactly suits the customer's needs and adheres to both schedule and cost.

As a small business, Genova takes a personal interest in the success of its customers' projects that often larger organizations can not replicate. Genova's references show that Genova consistently provides a high level of responsiveness, reliability, and flexibility. Genova utilizes project management techniques and methodologies adapted from industry standards and best-practices such as the Project Management Institute' *Body of Knowledge*.

Genova is committed to maintaining effective, consistent communication with the customer throughout all stages of the project. Genova uses a variety of methods to keeping the client involved. Genova submits status reports at regular intervals. Frequent meetings are scheduled to review progress, plan strategies, or mitigate risks. In addition, there are phone calls, emails, and secure access to project information online. Genova has a virtual private network (VPN) solution in place to provide the project team access to project information from the office, home, or while traveling. Genova is also implementing an Enterprise Project Management solution that will allow customers to view project information online 24 hours a day.

ADMINISTRATION

As you can see by the chart below, Genova has extensive experience in a number of administrative skill sets. For all of these areas, Genova can perform independently as well as teach others. While this list is extensive, it is not all-inclusive. Genova is continually acquiring new skill sets through training and acquisition of new employees.

	Web	Languages & Scripting	Operating Systems	Networking	Dev./ Report Tools & Frameworks,	Methodologies	Database	End User Tools
ASP								
ASP.NET								
Certificate Authority								
Cold Fusion								
HTML								
IIS 5.0								
PKI implementation								
SSL toolkit								
XML								
Ada								
Assemblers								
Awk								
bash								
Basic								
Borland C++								
C								
C#								
C++								
COBOL								
csh								
Java								
JAVA Script								
JOVIAL								
Pascal								
Perl								
PHP								
PL/M-86								
Python								
Ruby								
RatFor (Rational FORTRAN)								
Visual Basic								
Visual C++								
x86 Assembler								

	Web	Languages & Scripting	Operating Systems	Networking	Dev./ Report Tools & Frameworks,	Methodologies	Database	End User Tools
DOS								
Linux.								
LynxOS RTOS								
Solaris								
Unix								
Windows (NT, 98, 2000, XP)								
DNS								
Network protocol design / analysis								
NIS								
NIS+								
Syntax TAS								
TCP/IP Networking								
Builder								
COM								
CORBA								
Crystal Reports								
CVS								
DOORS								
Eclipse								
Forth								
MFC								
MS SourceSafe								
NetBeans								
NTDDK								
NuMega DriverWorks								
OPNET Modeler								
Rational ClearCase								
Rational Rose								
SQL Reporting Services								
STL								
Symbol wireless access points								
WNMP protocol								
Design Patterns								
Multi-threading								
Object Oriented Design / Analysis								
Project Management								
Requirements Analysis								
Security analysis								
Shell								
MS Access								

	Web	Languages & Scripting	Operating Systems	Networking	Dev./ Report Tools & Frameworks,	Methodologies	Database	End User Tools
ODBC.								
Oracle Certified DBA								
PL/SQL								
SQL								
Transact*SQL								
Lotus Domino								
Lotus Notes								
Lotus SmartSuite								
MS Office								
MS Project								
MS Visio								

5. ADOPTING CLIENT POLICIES

Describe your company's practices in adopting client policies and methods.
When beginning a project, Genova requests a copy of the customer's relevant coding standards and any document templates that will be utilized. When the Project Manager sees a value departing from the standard, the issue is discussed with the client. The Project Manager is also responsible for ensuring that the client's quality control and security standards are followed.

Genova has developed a Quality Assurance Manual that includes coding standards, project management methodologies, and other quality procedures. Genova will employ its own policies whenever clients do not have their own in place. If the two policies are in conflict, Genova will defer to the client's policies, unless a real value is gained by veering away from the policy. In this situation, Genova would discuss the advantages of altering the policy with the client and allow the client to make an informed decision regarding which policy to adhere to.

6. OPERATING & COMMUNICATION SYSTEM EXPERIENCE

List each type / brand of operating system/ communication system you are experienced with in each category below and make comments.

System	Experience	Independent Performance	Ability to Teach
Mainframe	Limited	Yes	No
Midrange / Minicomputer	Sun Solaris – Decades of combined experience. Ulta 1, 250, 450 class	Yes	Yes
Client / Server / Distributed Systems	Windows, Unix, Linux, NT	Yes	Yes
Desktop	Windows 9x/NT/2000, Linux, Solaris, ME	Yes	Yes
LAN	Solaris, Microsoft, Novell, NT, 2000, Linux Naming services – DNS, NIS, NIS+, NDS and small amount of LDAP.	Yes	Yes
Languages and DBMS	C++, Visual C++, Borland C++ Builder, C, C#, Java, Ada, ASP.Net, ASP, VB, HTML, XML, Cold Fusion, Crystal Reports, CORBA, COM/DCOM, Portal/Internet Development,	Yes	Yes
Model Based Development	MATLAB/Simulink	Yes	Yes

7. DATABASE EXPERIENCE

Describe your products / experience with Databases.

Product	Experience	Independent Performance	Ability to Teach
Administration	Oracle Certified, SQL Server Certified, Microsoft Access, and ODBC client connections	Yes	Yes
Application Development Tools	Used many languages to create client and web applications tied to databases, SQLAPI with C++ and native Oracle	Yes	Yes
End User Tools	WebCE, Timecard,	Yes	Yes
Structure & Methodologies	UML, N-Tier, EA,	Yes	
Other	SQL statements; ODBC, JDBC.	Yes	Yes

Additional Information

Our company has over 10 years of experience with database design and development with various databases including Microsoft Access, Oracle, Microsoft SQL Server, Progress, DB2, and IDMS.

Our Database administrators are certified in Oracle and Microsoft SQL server 7.0 and 2000. The figure below shows some of the database expertise and services available from Genova.

Database Administration

These types of services would likely be needed by companies that have don't have a full time DBA on staff.

1) **Database set up**
   a) Check for adequate redundancy of control files and redo logs
   b) Proper sizing of roll-back segments and data files
   c) Check for file contention
   d) File striping
2) **Back up**
   a) Review backup/ recovery strategy
   b) OS Scripts for shut-down/backup/startup
   c) Archive redo logs
3) **File Reorganization**
   a) Tables
   b) Indexes
4) **Users**
   a) Password maintenance
   b) Privilege/Role/Profile maintenance
5) **Alert Files**
   a) Check/clean up Alert and Trace files

Database Tuning

These types of services are much more time intensive. Hence, even when a DBA is on staff, they may not have the opportunity to work through the testing required. They are listed in order of diminishing return.

1) **Operating System**
   a) CPU Usage
   b) Memory Usage
2) **System Global Area**
   a) Check sizing of SGA, Shared Pool, Data Dictionary Cache and Library Cache
   b) Tune Buffer cache
   c) Tune Redo Log buffer
3) **I/O**
   a) Tune Checkpoints
   b) Tune background processes
   c) Reallocate/ Reorganize table-spaces
   d) Tune Sort area and Temporary table-space
   e) Tune Rollback segments
4) **Locks and Latches**
   a) Check for contention

Application Tuning

These types of services are much more time intensive. Hence, even when a DBA is on staff, they may not have the opportunity to work through the testing required. This could be done before an application went into production or, assuming the source was available, could be part of an ongoing tuning process. The most effective tuning is done here.

1) **SQL Statements**
   a) Test and recommend changes to application SQL statements
   b) Write packages that may could replace code based SQL calls
   c) Pin packages in memory.
2) **Indexes**
   a) Select most efficient index for application

All of these services assume a single server implementation. Partitioned and possibly multithreaded servers may require special consideration.

ORACLE | PARTNER PROGRAM

8. SOFTWARE EXPERIENCE

What general software applications have you experience in?
Genova's staff averages 15 years industry experience. Genova has created custom software solutions for clients in banking, medical, transportation, communication, and government industries. Genova's unique approach has saved customers millions of dollars.

Application Development
Application development includes multi-tiered, client/server, and web services applications across diverse environments including Windows, Linux, Unix, and embedded operating systems. Genova has extensive experience in leading databases and programming languages. To better server our clients, Genova is committed to staying current with emerging trends and technologies.

Network Design and Remote Management
Genova has developed several WAN and LAN implementations. Networking connections included traditional LAN and WAN protocols as well as wireless and satellite transmissions. Genova also provides remote management over a virtual private network (VPN). This has proven to be the most cost effective solution for our clients that need technical assistance for undetermined times, upon their request.

System Integration
Genova designed, developed, and implemented a worldwide system integration effort that involved a multi-vendor legacy platform environment. This was a global application and installation that included customization of Commercial Off the Shelf (COTS) software. After the successful deployment of the application, Genova has been retained on a consulting services basis to provide support as needed for over eight years.

Web-Based Application Development
Genova has developed several cutting edge web applications that include various functions including data gathering, reporting, and analysis over the web. In order to provide full support to our customers, security services includes Internet Firewalls, Secure Web Servers, Intranet and Extranet site development and clearly defined portal development applications that restrict access and privileges.

9. OTHER EXPERIENCE

Please describe any experience and deployed solutions in each of the following specific technologies below.

Item	Experience	Independent Performance	Ability to Teach
a) Help desk solutions / technologies	See detailed experience below	Yes	Yes
b) Data development	See detailed experience below	Yes	Yes
c) Data modeling	See detailed experience below	Yes	
d) Facilitating and consulting	See detailed experience below	Yes	Yes
e) Photogrametery and remote sensing	See detailed experience below	NA	NA
f) Data collection and clean up mapping	See detailed experience below	Yes	Yes
g) GIS / ESRI Software / Mapinfo	NA	NA	NA
h) Electronic Commerce / EDI	NA	NA	NA
i) Document management	NA	NA	NA
j) Telecommunications wide area network	See detailed experience below	Yes	Yes
k) Biometrics	NA	NA	NA
l) Wireless networking	See detailed experience below	Yes	Yes
m) IT staffing	See detailed experience below	Yes	Yes
n) Graphic / web design	See detailed experience below	Yes	Yes
o) Other	See detailed experience below	Yes	Yes

HELP DESK SOLUTIONS / TECHNOLOGIES

Genova assisted a group within the Department of Defense (DoD) with policies and plans for deploying their IT help desk. This group had distributed, regional help desks, but had been mandated to consolidate and form a centralized help desk at headquarters. This problem required new IT policies and plans. Next, Genova examined help desk industry standards, and the tools and infrastructure available to DoD to solve this problem. One of the leading industry standards for managing a help desk is called ITIL – IT Infrastructure Library. It covers much more than help desk, but is a good basis for developing many infrastructure standards. DoD's help desk system was Remedy™, which is based on ITIL standards. Since the help desk system was in alignment with a proven industry standard, Genova began aligning policies and plans to meet standards. Genova also needed to modify the standards to fit the DoD and its user community. Finally, DoD did not have funding to purchase all of the functionality available in Remedy; therefore, Genova assisted with modification of their policies and plans to fit that subset of functionality. Genova also wrote software to communicate between disparate help desk technologies across the Internet.

DATA DEVELOPMENT

This project highlights Genova's ability to work closely with technology partners in all phases of a project from concept to full integration and testing.

The Advantaged Node Technology (ANT) project is a component of the Multifunctional On the Move Secure Adaptive Integrated Communication (MOSAIC) Advanced Technology Demonstration (ATD) program. The goal of the MOSAIC program was to develop and demonstrate a suite of protocols for providing end-to-end communication services across mobile ad-hoc military networks with assured throughput, latency, and dependable delivery. In particular, this advantaged node technology utilized the enhanced visibility of elevated nodes (or nodes connected to other networks) in a manner that increases the overall capabilities of the network.

Key concepts of the Advantaged Node Technology are:

- Avoiding congestion in nodes that have significantly better connectivity to the members of a target sub network, than does the average node -- for example airborne nodes. Congestion may typically happen in such nodes, because all shortest path routes would tend to flow through this highly connected node. The Advantaged Node Protocols attempt to alleviate this congestion by discovering and manipulating the connectivity at layer 2 in order to create a network topology at layer 3 that only routes certain classes of service through the advantaged nodes.
- Avoiding routing instabilities in nodes with an advantaged position but have dynamic or intermittent connectivity, for example a low moving helicopter. This type of node is considered a disadvantaged node.
- And, taking advantage of nodes with links to additional sub networks, which may offer, for example, long-range one-hop, communications to a similar node in a distant part of the original sub network.

The work on this program started with using the ANT concept and defining the requirements for the software. Work progressed through the software design, modeling, and development. After successful testing and demonstration in the lab environment, the software was ported to a military communications radio. The radios were placed in vehicles in a field test environment

and the technology was successfully demonstrated to potential end users. This technology is intended to play a key role in the communications infrastructure of advanced military radios of the future.

During the program, Genova engineers provided the following services:

- Assist with requirements definition
- Design of the communications software and routing protocol implementation
- Development and coding of the communications software
- Support for execution of the developed code in modeling software packages
- Design the interfaces to allow the software to be installed and configured on the target radios
- Testing within the development lab
- Work with radio hardware engineers to install and configure the software on target radios
- Support for both lab and field demonstrations.

Genova engineers worked closely with Rockwell Collins engineers throughout this project to support the development and, in particular, the integration of the new communications software onto the target radios.

DATA MODELING

Genova has certified database administrators on staff. We have Oracle Certified and Microsoft Certified Application professionals on staff. Collectively, they have over 40 year's industry experience. Following are highlights of projects they have worked on while at Genova:

Iowa DNR
This tool tracks the effluent and influent flow of chemicals deposited into water areas. The program is designed to generate permits for facilities that are requesting to dump pollutants into the water and then tracks the mandatory reports submitted by companies to ensure compliance with environmental regulations.

- Modeled a pollution discharge measurement system in SQL Server that included an XML export to the EPA database.
- Data modeling to convert an IDMS mainframe database to Microsoft SQL Server
- Data modeling to make necessary change to the Microsoft SQL Sever database to Configure it for One Stop Initiative

Siemens
Genova enhanced an existing application to dispatch and track Freeway Service Patrol and Traffic Management Teams. The Freeway Service Patrol consists of tow trucks that are contracted during rush hour traffic to provide assistance to motorists. This assistance can come in the form of a gallon of gas, towing of the vehicle, to transporting of occupants of the vehicle to ensure traffic congestion is minimized. Traffic Management Team vehicles also aid motorists by raising a sign on their trucks to inform motorists that they are approaching a potential traffic incident. These incidents can range from lane closures to detours.

The existing application was used for one-way assignment of incidents from the dispatcher to the vehicles for Police, Fire, and Ambulance. The new development consists of new incident types and the ability of a vehicle operator that discovers an incident to assign himself to that incident while keeping Supervisor vehicles and Dispatch informed of the incidents, their progress, and locations. The vehicles are tracked on an on-screen map and the incident status

is tracked and updated on a separate screen as they respond, arrive at the scene, or complete the incident.

Some of the tasks Genova assisted with are:

- Remapped the data model for a SQL Server database to Oracle converting all entities including tables, views, stored procedures
- Created SQL Server data model for traffic assistance package that modeled support vehicle locations, accidents, and traffic flow incidents.
- Designed to Siemens' database design standards.

Rockwell

Genova developed a common tool to compile assumptions for marketing and sales of aircraft for their Commercial Systems. This new tool was to take six long-term sales and forecast processes and methods across six different business units and consolidate them into one process to support the forecast and variety of requests from managers.

Specific tasks performed by Genova included:

- Provide a common tool to compile Rockwell's assumptions for Market & Sales forecasting for aircraft across six divisions.
- Perform analysis between using SQL Server vs. Microsoft Access
- Allows analysis across the Commercial Service Business
- To Convert 6 Microsoft Excel spreadsheets from six divisions into one process using Microsoft Access.
- Allow import of information from other database's and Microsoft Excel spread sheets
- Allow Data entry of information
- Create reports in Microsoft Excel
  - *Allowed the users to do "what if" scenarios without changing the forecast data.*
  - *Allowed the user to do ad hoc reporting from the information dumped to Microsoft Excel.*

Union Pacific Railroad

Genova created this database driven application allowing locomotives to wirelessly report their location and locomotive health. The application's responsibility was to capture this data, store it in the database, and display to dispatchers any potential mechanical problems that the locomotive was reporting. The goal of the system was to be able to know about mechanical problems before the locomotive came into the depot, so that the necessary parts could be waiting.

The Genova team designed and implemented the Oracle database for storing health information on the various systems installed on a locomotive. This included designing and documenting the Entity Relationship Diagram, Data Dictionary, and DML script. Genova was also responsible for installing the Oracle 7 database server for client. Client tools utilized Visual Basic and ODBC to access the database tables. The database was critical to the success of the project, because much of the data had several inter-dependencies and unknowns. Union Pacific was so impressed with the database design and implementation, that they copied it for some of their other systems (i.e. railroad cars), to do similar applications.

General

Learning and Training Strategic Consulting

Our experienced teams are dedicated to assisting you in analyzing and clarifying business objectives, resulting in successful custom solutions. Every custom solution begins with defining and understanding the audience, available instructional technology (LMS/LCMS), standards (SCORM and 508 compliance) company culture, initiatives, and desired results.

Training Content Development Conversion
Transforming a storyboard, script, or manual into e-learning modules involves more than a simple cut-and-paste process. Off-the-shelf e-learning authoring tools can provide limited interaction and customization. With our custom development solution, a team of developers transforms your content from static text into engaging learning objects, enhancing knowledge transfer resulting in greater retention. We have SCORM and 508 compliancy expertise. *We can convert:*

- PPT, Word or Excel to a web-based module or modules (deployed on our LMS or yours)
- Authorware modules to a web-based module or modules
- Toolbook to a web-based module or modules (deployed on our LMS or yours)
- Video presentations (VHS) to a web-based module or modules (deployed on our LMS or yours)

Training Content Conversion
With our content conversion and development solution, a team of developers can transform your manuals or existing classroom-based training materials. We can supplement your training materials by converting only those pieces/modules that are able to be delivered over Internet.

Our solution is custom and we focus on making sound instructional decisions when converting existing training materials. For example, we do not suggest converting ALL of your classroom-based training materials simply for the sake of putting training on the Internet. We have SCORM and 508 compliancy expertise. *We can convert:*

- Once we analyze your content, audience and delivery goals,
- Testing or quizzes for delivery on the Internet (with custom reporting)
- PPT, Word or Excel to compliment your classroom-based materials
- Video presentations (VHS) to a web-based delivery mode

FACILITATING AND CONSULTING

Genova teaches a requirements analysis and adaptive software development training course, entitled “Managing Projects in ‘Internet Time’”. This training focuses on how to create a productive, satisfying work environment while managing a project from the initial requirements capture phase through to final testing and delivery. The training is divided into four major topic areas. The first area focuses on how to start a project right by kicking off planning the project, defining the mission of the project, and how to execute the initial requirements analysis phase.

The second area then focuses on an in depth requirements capture, development, and analysis methodology. This methodology also can prove completeness of the requirements. This is the most detailed part of the course.

The third section of the course then deals with how to manage a project using the software adaptive lifecycle development process. The waterfall development process has been the standard for several decades. This process works well when all of the requirements are known up front, and the requirements do not change. For most modern projects, the waterfall process does not work well because the users do not know all of the requirements up front, and may

actually change during the software development process. This is where the adaptive lifecycle development process shines. This methodology is iterative, and allows the development team to make “course corrections” to requirements and design during the development process; thereby producing a product that the customer wants and needs while staying within budget and schedule.

The last section of the course is entitled “Teamicide: How to Kill Otherwise Happy, Productive People and Projects.” This part of the course focuses on the results of a twenty-year study that showed that most IT projects fail due to politics, not technology. The study found that for each failure, there was always a technological solution; the failure was due to politics such as hidden agendas/motives, disenchantment with a customer, unclear requirements, etc. This part of the course focuses on how to avoid political problems with cause “teamicide” and to help projects be successful while also providing a fun, productive work environment for the team.

PHOTOGRAMETERY AND REMOTE SENSING

Not Applicable.

DATA COLLECTION

Timecard Tracking System
Genova designed and implemented an Oracle database for time card record keeping. This included designing and documenting the Entity Relationship Diagram, Data Dictionary, and DML script. Genova was also responsible for installing the Oracle 8 database server. Client tools utilized Visual Basic and Oracle Objects for OLE to access the database tables. This project involved migrating data and code from SQL Server to Oracle to MySQL.

Repair Tracking System
Genova designed and implemented an Oracle database for tracking repair data performed on aircraft systems. This included designing and documenting the Entity Relationship Diagram, Data Dictionary, and DML script. Client tools utilized Visual Basic and Oracle Objects for OLE to access the database tables.
Genova assisted The National Cancer Institute and the University of Iowa (from now on, referred to as just “NCI”) with the development of an application for their abstractors to gather cancer data. Abstractors go from hospital to hospital collecting data from cancer cases so that NCI can perform statistical analysis on the data. NCI had two major problems with their existing tool. First, it had several bugs that were slowing down the abstractors so that they were collecting less data. Secondly, NCI had a requirement to be able to gather quickly new information in accordance with the College of Surgeons guidelines. For example, if the College of Surgeons wants data collected on cancer patients who live within fifty miles of a nuclear plant, the tool needed to be quickly adaptable to gather this new information. NCI’s existing tool was not quickly adaptable, and the company owning the tool would take months to respond to new requirements.

National Cancer Institute
This project was on a tight schedule, since the budget for development was the budget allocated to buy the license for the existing tool for the following year. Therefore, if Genova did not finish the project on time, NCI would be in a bind, because the money to buy licenses for the existing tool would have been spent on development and NCI would be left with no abstracting tool. NCI hired Genova to gather, develop, and analyze the requirements of the tool, then to develop, test, and deploy the new tool. Genova met with the NCI staff and investigated the existing tool to document the initial requirements.

The abstractors needed to have a tool that would present to them different data fields to allow them to answer different questions as the College of Surgeon special studies dictated. To fulfill this requirement, Genova used a new technology (XML) in a new, unproven way. Genova identified this high-risk requirement early in the development process and began designing for it. The adaptive lifecycle development process methodology requires high-risk requirements to show an early proof-of-concept so that the risk can be mitigated early. This is what Genova did. Genova showed a successful proof-of-concept of this high-risk requirement during the first 4-6 week cycle that helped set the course for the rest of the project.

The NCI Abstracting tool was finished on-time, in-budget, with complete documentation showing the traceability of requirements from the initial requirements capture documents, through to the design documents, into the code, and finally into the test plan and procedures. The abstractors commented that they were able to complete 50% more abstracts with the new tool and that they were very satisfied.

Chicago Maps ActiveX Tools Document Management
This project demonstrates Genova's ability to deliver requirements engineering services, including requirements capture, development, analysis, and management. This project also demonstrates that Genova's requirements methodology is useful for not only projects to be developed, but also for the purchase of COTS (commercial-off-the-shelf) software.

The Defense Commissary Agency (DeCA) had funding to purchase a Records and Documents Management System. A DeCA resource assigned to gathering the requirements to produce the RFP was tasked with maintaining the existing, antiquated records and documents management system. Due to multiple problems in the existing system, the DeCA employee had fallen far behind schedule in developing the requirements for the new system. He was so far behind, that DeCA was faced with the prospect of losing their funding if the RFP and its responses could not be completed in a timely manner.

DeCA asked Genova to help them quickly develop solid requirements for their new records and documents management system. The Genova team worked with the DeCA staff and DeCA users to develop the requirements. This project was also "politically charged" because records and documents management crossed many domains, and each user domain had strong opinions on how the new system should work. The Genova team not only quickly developed the requirements, but also successfully navigated the political minefield, as stated by an email from the DERMAS Project Manager:

> *As discussed today on the phone, I cannot tell you how valuable Jim has been to the DERMAS effort. I do not know if anyone can save this ship, but Jim sure has been terrific since Day One, coming into a seemingly hopeless situation. His determination, skills, ethics, professionalism, manners (believe me, these came in terribly handy), and ability to stay on track and press forward (amongst the confusion and lack of direction), are just what the DERMAS doctor ordered. He has been positively instrumental in helping to connect a lot of the dots around this place, and he is to be commended…Although we are not through with him (!), I just wanted to take the time to thank you. It is a pleasure to work with Jim.*

GIS / ESRI Software / MapInfo

Not Applicable

Electronic Commerce / EDI

Genova has not had any direct EDI experience, but has researched it and worked with similar technologies.

Telecommunications Wide Area Network

Genova contracted to analyze and build a worldwide remote office network for Naval Exchange Services Command (NEXCOM). When Genova began working on the project in 1993, the 100+ NEXCOM facilities had no connectivity amongst themselves. This resulted in several homegrown applications developed at each location. Many of the applications performed the same functionality, but were running on different platforms, written in multiple languages and accessing disparate databases. It was Genova's task to unify and integrate these systems.

The system delivers office productivity applications, email, and network file and print services to 3000 users around the world using 60 Solaris servers and 1500 PC workstations. This project required very careful planning due to the business requirement that all system administration had to be done by personnel stationed at the corporate headquarters; there would be no technical support at each remote site. A difficult technical hurdle resulted from the client's requirement to use Sun's NIS+. This meant that two Sun Sparc servers were required at each site, according to Sun's recommendation to eliminate risk of system unavailability caused by WAN outages. Genova's network integration experts worked with Sun Consulting to develop custom PC client management software and modified authentication code to eliminate this two-server requirement. In addition, Genova created customized tools to allow the core group of administrators at the corporate headquarters to manage the entire network. Reducing the number of servers at a site from two to one and providing a centralized management system with greater controls operated by just 10 employees ***generated cost savings of $1 Million the first year alone***. These reductions were accomplished by integrating COTS and custom software. The Genova innovations are now included in the Sun releases.

BioMetrics

Genova has done extensive research in the field of Biometrics, but has not had the opportunity to apply it either internally or for a client.

Wireless Networking

Genova developed a world-class application as part of an onboard information network, providing an international transportation customer with a unique system that provides in-flight wireless access to information onboard a server on the aircraft as well as information available on the Internet. Using this technology, airline customers can surf the Internet or check their email while in flight.

Crewmembers can also use the system to support applications that eliminate many of the paper forms required upon arrival and before departure. Using the system's wireless LAN, these applications exchange data between the aircraft and the airline's network at the airport, enabling the airline to save both time and money.

The Wireless LAN Manager (WLM) provides management and health monitoring of the wireless LAN hardware within the unique environment of the aircraft. WLM ensures that the wireless LAN is disabled during critical phases of flight. When the wireless LAN is enabled, WLM ensures that it is operating at a frequency legal in the country where the aircraft is currently located.

WLM is a complex software development effort that requires frequent communication with others involved in the development of the total system, to define the many external interfaces WLM is required to support. WLM supports the following external interfaces:

- SNMP communication with the wireless hardware
- Proprietary communication with the wireless hardware
- Interfaces to two CORBA service processes
- Interface to a discrete I/O driver
- Interface for secure communications to an avionics data controller unit
- SNMP communication with SNMP manager applications
- Interface to an Oracle database
- Interface to XML files for configuration data

Because of the many external interfaces, the application design was required to be multi-threaded to prevent delays in communication over the interfaces. Genova implemented several design patterns within the application to meet performance requirements and provide flexibility as external interfaces changes over the life of the program.

Initial development began with the use of a third party library to handle the direct communication with the wireless hardware. After some early testing, it was determined that the third party library could not support all the requirements. Genova developed a replacement library that required a detailed understanding of how to configure and communicate with the wireless hardware. The new library met all requirements, ***delivered a 10-fold increase in performance,*** and is estimated to ***save the customer approximately $2 million*** over the life of the program.

WLM was initially targeted to run only on the Windows operating system. Recent efforts have required a port to run on Linux. Due to up-front design considerations at the beginning of the project, porting the existing application to Linux was accomplished in approximately 6 weeks.

During development of the WLM application, Genova engineers provided the following efforts:

- Software requirements definition and documentation
- Complete software design of the application and some of the external interfaces with required design documentation
- Software development and coding
- Unit testing of all code
- Software acceptance test plan and procedures documentation
- Support for system integration with actual hardware both locally and in Toulouse, France.
- Installation and configuration support documentation

WLM is currently in production and has been installed on commercial aircraft.

This project highlights many of Genova's abilities to design and develop a complex, yet robust, software application and provide support throughout the project to make it a success.

IT STAFFING

Genova has a recruiting department that supplements the IT staffing needs of our customers locally and nationwide. Genova understands that hiring managers are already overwhelmed with other responsibilities and commitments and we are deeply committed to saving them time

by submitting only highly qualified candidates. Our rigorous screening process has resulted in over 80% of candidates presented being made an offer.

Generally, one of the drawbacks of using supplemental staff to perform on projects is that when their assignment is over and they move on to their next assignment, the project knowledge goes with them. Genova mitigates this issue in two ways. First, whenever possible, Genova assigns a full-time permanent Genova employee to work with the supplemental staff so that Genova retains the knowledge base. Genova has an extremely high employee retention rate. Customers have contacted us years after the completion of a project and were able to speak to original project team members. The second way Genova helps prevent knowledge loss is by scheduling a meeting with the departing contractor(s) for a project review prior to their departure. This extra effort helps our clients long after the project concludes.

Graphic / Web Design

Genova has developed several cutting edge web applications that include various functions including data gathering, reporting, and analysis over the web. In order to provide full support to our customers, security services include Internet Firewalls, Secure Web Servers, and Intranet and Extranet site development and clearly defined portal development applications that restrict access and privileges.

Other

Continuing Education System
Genova, in partnership with the University of Iowa, won a SBIR (Small Business Innovation Research) grant to develop a tool to address the problem of medical errors due to the omission of using guidelines.

Genova provided the technical abilities in database design, database administration, data load balancing, web server technology expertise, intuitive Graphic User Interface design, current off-the-shelf technologies, and networking expertise. The University of Iowa provided clinical medical consulting expertise and guidance during the design phase and crucial field-testing of the now patented WebCE tool.

WebCE allows the physician to gain access to new medical information and standardized medical practices while receiving CME credits during his/her clinic day. The Physician gains this information (and CME credit) in granules as small as one-two minutes. Physicians can even obtain more credits on a subject by requesting links to be sent to them at the end of the clinic day.

The Genova team worked with groups of physicians to determine their requirements, and then designed and built WebCE. Genova also worked with the AMA to insure that the new system would meet AMA CME guidelines.

Invitation to Qualify

Genova Technologies
5250 N River Boulevard NE
Cedar Rapids, Iowa 52411
www.genovatech.com

Contact
Ann Fleckenstein
Dir. Business Development
Phone 319-378-8455
Fax 319-378-8457
ann.fleckenstein@genovatech.com

Woman-Owned Small Business

DUNS
92-985-2820

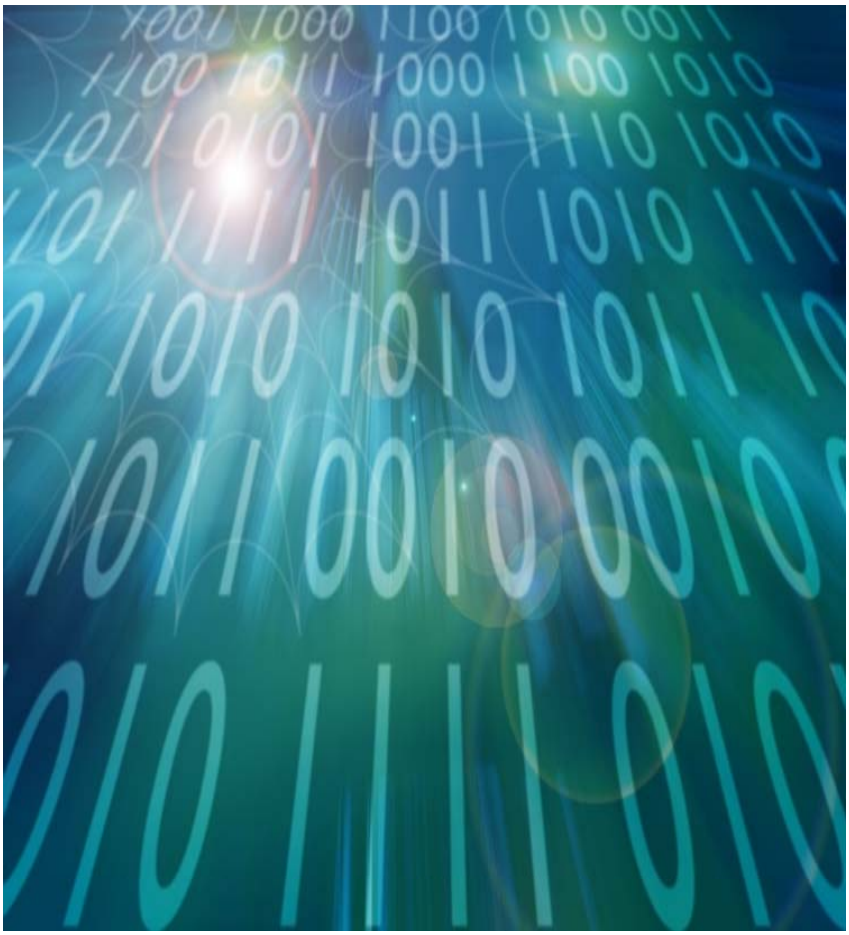
CMS BPA
HHSM-500-2005-00001B

GSA Schedule 70
GSA GS-35F-0303M

NAICS Codes
518210, 541511, 541512, 541519, 54171, 541330, 541611, 611420, 611430

RFP BD80200S102

On-Going Support



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1. PROVIDING RESOURCES

How do you intend to provide the resources required by this ITQ?
Genova has a Resource Planning Team that is responsible for coordinating all resources for current and future projects. The committee meets at least once a week to discuss the progress on existing jobs as well as any potential projects for the future. The Committee utilizes Microsoft Project to organize and track the company's various projects and resources. With this process, Genova has the ability to plan for all projects and resource needs well in advance. This ensures that the company is able to meet all personnel requirements in a timely manner.

2. CONTRACT ADMINISTRATOR

Identify the SP contract administrator and describe the functions that person will perform.
Ann Fleckenstein will act as the contract administrator. Her contact information is as follows: Genova Technologies, 5250 North River Blvd NE, Cedar Rapids, Iowa 52411; (319) 378-8455; ann.fleckenstein@genovatech.com
The contract administrator (CA) will be responsible for the overall performance of the contract in accordance with contractual requirements as well as Genova company policies. The CA will have full responsibility and authority in all areas necessary for the accomplishment of the mission and will be the primary point of contact for business negotiations.

The CA will transition each project over to a Project Manager (PM) who will become the primary point of contact for the technical aspects of the project. The PM will direct staff in areas of cost, schedule, technical performance, impact analysis, software quality assurance, management, project controls, and project administration. Inherent responsibilities include providing and submitting all plans, records, reports, and data to the customer in accordance with Genova policies and contractual requirements. The CA and PM will maintain liaison with State officials regarding the operational and contractual aspects of the project.

3. PROVIDING ADDITIONAL PERSONNEL

Describe how you plan on providing additional personnel if it becomes necessary to properly staff projects.
As discussed in question 1, Genova has a Resource Planning Team that meets regularly coordinate current and future resource needs.
In addition, Genova has an internal Recruiting Department that works closely with Genova's Resource Planning Team to anticipate vacancies and surge requirements in sufficient time to identify replacement or supplemental candidates.
Another approach Genova uses is to partner with organizations and companies that can provide extensive experience or additional personnel that would be a "fit" for the project. While these companies may compete with Genova in some areas, there can be significant benefits to working together as a team. We refer to this relationship as "co-peting". By forming these partnerships, Genova provides our customers with the best possible team to perform the work.

4. ABILITY TO ADDRESS ISSUES

Describe your company's ability to uniquely address problems and issues related to the service category.

Genova's premier differentiator is the ability to quickly and thoroughly document all system and project requirements with its proprietary technique. Genova is able to track each requirement from analysis, to design, development, testing, and documentation. As new requirements or risks are uncovered, their impact to the schedule and/or budget is discussed with the customer. An adaptive lifecycle approach enables Genova to make the necessary adjustments throughout development, resulting in a final project that exactly suits the customer's needs and adheres to both schedule and cost.

As a small business, Genova takes a personal interest in the success of its customers' projects that often larger organizations can not replicate. Genova's references show that Genova consistently provides a high level of responsiveness, reliability, and flexibility. Genova utilizes project management techniques and methodologies adapted from industry standards and best-practices such as the Project Management Institute' *Body of Knowledge*.

Genova is committed to maintaining effective, consistent communication with the customer throughout all stages of the project. Genova uses a variety of methods to keeping the client involved. Genova submits status reports at regular intervals. Frequent meetings are scheduled to review progress, plan strategies, or mitigate risks. In addition, there are phone calls, emails, and secure access to project information online. Genova has a virtual private network (VPN) solution in place to provide the project team access to project information from the office, home, or while traveling. Genova is also implementing an Enterprise Project Management solution that will allow customers to view project information online 24 hours a day.

SUPPLEMENTAL STAFFING

On Going Support & Administration

In addition to supporting state initiatives with Genova full-time employees, Genova also has the capability and experience to provide highly qualified contractor personnel to support these initiatives.

In the supplemental staffing arena, Genova thoroughly screens potential contractor candidates for both technical and soft skills. Genova screening process is conducted by in-house recruiters and by Genova's Engineering Managers, and includes face to face interviews whenever possible. Genova considers the candidates technical skill sets and prior work experience, as well as how their personality will fit the position and team that he or she will be placed. Once a candidate has passed the screening process, Genova conducts a reference check on the candidates past performance. Genova also conduct background investigations and drug testing for each candidate as required for the positions being filled.

Genova's recruiting department utilizes a variety of recruitment, training, and retention strategies and programs designed specifically to attract and maintain some of the industry's most highly qualified personnel resources. Open positions are posted on subscription resume database services as well as Genova's website to generate a flow of resumes to meet each position requirement. Genova's recruiting team also attends job fairs, and, when necessary, advertises position opportunities in newspapers and trade magazines to attract the greatest number of qualified professionals. In addition, some candidate resumes are received from

employee referral programs, including periods where bonuses are offered for referral of applicants for hard-to-fill positions.

In the event that a security clearance is required for either a full-time Genova employee or for contract personnel, Genova has secret level facility clearance and can hold clearances at the secret level for individuals.

5. ADOPTING CLIENT POLICIES

Describe your company's practices in adopting client policies and methods.
When beginning a project, Genova requests a copy of the customer's relevant coding standards and any document templates that will be utilized. When the Project Manager sees a value departing from the standard, the issue is discussed with the client. The Project Manager is also responsible for ensuring that the client's quality control and security standards are followed.

Genova has developed a Quality Assurance Manual that includes coding standards, project management methodologies, and other quality procedures. Genova will employ its own policies whenever clients do not have their own in place. If the two policies are in conflict, Genova will defer to the client's policies, unless a real value is gained by veering away from the policy. In this situation, Genova would discuss the advantages of altering the policy with the client and allow the client to make an informed decision regarding which policy to adhere to.

6. OPERATING & COMMUNICATION SYSTEM EXPERIENCE

List each type / brand of operating system/ communication system you are experienced with in each category below and make comments.

System	Experience	Independent Performance	Ability to Teach
Mainframe	Limited	Yes	No
Midrange / Minicomputer	Sun Solaris – Decades of combined experience. Ulta 1, 250, 450 class	Yes	Yes
Client / Server / Distributed Systems	Windows, Unix, Linux, NT	Yes	Yes
Desktop	Windows 9x/NT/2000, Linux, Solaris, ME	Yes	Yes
LAN	Solaris, Microsoft, Novell, NT, 2000, Linux Naming services – DNS, NIS, NIS+, NDS and small amount of LDAP.	Yes	Yes
Languages and DBMS	C++, Visual C++, Borland C++ Builder, C, C#, Java, Ada, ASP.Net, ASP, VB, HTML, XML, Cold Fusion, Crystal Reports, CORBA, COM/DCOM, Portal/Internet Development,	Yes	Yes
Model Based Development	MATLAB/Simulink	Yes	Yes

7. DATABASE EXPERIENCE

Describe your products / experience with Databases.

Product	Experience	Independent Performance	Ability to Teach
Administration	Oracle Certified, SQL Server Certified, Microsoft Access, and ODBC client connections	Yes	Yes
Application Development Tools	Used many languages to create client and web applications tied to databases, SQLAPI with C++ and native Oracle	Yes	Yes
End User Tools	WebCE, Timecard,	Yes	Yes
Structure & Methodologies	UML, N-Tier, EA,	Yes	
Other	SQL statements; ODBC, JDBC.	Yes	Yes

Additional Information

Our company has over 10 years of experience with database design and development with various databases including Microsoft Access, Oracle, Microsoft SQL Server, Progress, DB2, and IDMS.

Our Database administrators are certified in Oracle and Microsoft SQL server 7.0 and 2000. The figure below shows some of the database expertise and services available from Genova.

Database Administration

These types of services would likely be needed by companies that have don't have a full time DBA on staff.

1) **Database set up**
   a) Check for adequate redundancy of control files and redo logs
   b) Proper sizing of rollback segments and data files
   c) Check for file contention
   d) File striping
2) **Back up**
   a) Review backup/ recovery strategy
   b) OS Scripts for shutdown/backup/startup
   c) Archive redo logs
3) **File Reorganization**
   a) Tables
   b) Indexes
4) **Users**
   a) Password maintenance
   b) Privilege/Role/Profile maintenance
5) **Alert Files**
   a) Check/clean up Alert and Trace files

Database Tuning

These types of services are much more time intensive. Hence, even when a DBA is on staff, they may not have the opportunity to work through the testing required. They are listed in order of diminishing return.

1) **Operating System**
   a) CPU Usage
   b) Memory Usage
2) **System Global Area**
   a) Check sizing of SGA, Shared Pool, Data Dictionary Cache and Library Cache
   b) Tune Buffer cache
   c) Tune Redo Log buffer
3) **I/O**
   a) Tune Checkpoints
   b) Tune background processes
   c) Reallocate/ Reorganize tablespaces
   d) Tune Sort area and Temporary tablespace
   e) Tune Rollback segments
4) **Locks and Latches**
   a) Check for contention

Application Tuning

These types of services are much more time intensive. Hence, even when a DBA is on staff, they may not have the opportunity to work through the testing required. This could be done before an application went into production or, assuming the source was available, could be part of an ongoing tuning process. The most effective tuning is done here.

1) **SQL Statements**
   a) Test and recommend changes to application SQL statements
   b) Write packages that may could replace code based SQL calls
   c) Pin packages in memory.
2) **Indexes**
   a) Select most efficient index for application

All of these services assume a single server implementation. Partitioned and possibly multithreaded servers may require special consideration.

ORACLE PARTNER PROGRAM

8. SOFTWARE EXPERIENCE

What general software applications have you experience in?
Genova's staff averages 15 years industry experience. Genova has created custom software solutions for clients in banking, medical, transportation, communication, and government industries. Genova's unique approach has saved customers millions of dollars.

Application Development
Application development includes multi-tiered, client/server, and web services applications across diverse environments including Windows, Linux, Unix, and embedded operating systems. Genova has extensive experience in leading databases and programming languages. To better server our clients, Genova is committed to staying current with emerging trends and technologies.

Network Design and Remote Management
Genova has developed several WAN and LAN implementations. Networking connections included traditional LAN and WAN protocols as well as wireless and satellite transmissions. Genova also provides remote management over a virtual private network (VPN). This has proven to be the most cost effective solution for our clients that need technical assistance for undetermined times, upon their request.

System Integration
Genova designed, developed, and implemented a worldwide system integration effort that involved a multi-vendor legacy platform environment. This was a global application and installation that included customization of Commercial Off the Shelf (COTS) software. After the successful deployment of the application, Genova has been retained on a consulting services basis to provide support as needed for over eight years.

Web-Based Application Development
Genova has developed several cutting edge web applications that include various functions including data gathering, reporting, and analysis over the web. In order to provide full support to our customers, security services includes Internet Firewalls, Secure Web Servers, Intranet and Extranet site development and clearly defined portal development applications that restrict access and privileges.

9. OTHER EXPERIENCE

Please describe any experience and deployed solutions in each of the following specific technologies below.

Item	Experience	Independent Performance	Ability to Teach
a) Help desk solutions / technologies	See detailed experience below	Yes	Yes
b) Data development	See detailed experience below	Yes	Yes
c) Data modeling	See detailed experience below	Yes	
d) Facilitating and consulting	See detailed experience below	Yes	Yes
e) Photogrametery and remote sensing	See detailed experience below	NA	NA
f) Data collection and clean up mapping	See detailed experience below	Yes	Yes
g) GIS / ESRI Software / Mapinfo	NA	NA	NA
h) Electronic Commerce / EDI	NA	NA	NA
i) Document management	NA	NA	NA
j) Telecommunications wide area network	See detailed experience below	Yes	Yes
k) Biometrics	NA	NA	NA
l) Wireless networking	See detailed experience below	Yes	Yes
m) IT staffing	See detailed experience below	Yes	Yes
n) Graphic / web design	See detailed experience below	Yes	Yes
o) Other	See detailed experience below	Yes	Yes

HELP DESK SOLUTIONS / TECHNOLOGIES

Genova assisted a group within the Department of Defense (DoD) with policies and plans for deploying their IT help desk. This group had distributed, regional help desks, but had been mandated to consolidate and form a centralized help desk at headquarters. This problem required new IT policies and plans. Next, Genova examined help desk industry standards, and the tools and infrastructure available to DoD to solve this problem. One of the leading industry standards for managing a help desk is called ITIL – IT Infrastructure Library. It covers much more than help desk, but is a good basis for developing many infrastructure standards. DoD's help desk system was Remedy™, which is based on ITIL standards. Since the help desk system was in alignment with a proven industry standard, Genova began aligning policies and plans to meet standards. Genova also needed to modify the standards to fit the DoD and its user community. Finally, DoD did not have funding to purchase all of the functionality available in Remedy; therefore, Genova assisted with modification of their policies and plans to fit that subset of functionality. Genova also wrote software to communicate between disparate help desk technologies across the Internet.

DATA DEVELOPMENT

This project highlights Genova's ability to work closely with technology partners in all phases of a project from concept to full integration and testing.

The Advantaged Node Technology (ANT) project is a component of the Multifunctional On the Move Secure Adaptive Integrated Communication (MOSAIC) Advanced Technology Demonstration (ATD) program. The goal of the MOSAIC program was to develop and demonstrate a suite of protocols for providing end-to-end communication services across mobile ad-hoc military networks with assured throughput, latency, and dependable delivery. In particular, this advantaged node technology utilized the enhanced visibility of elevated nodes (or nodes connected to other networks) in a manner that increases the overall capabilities of the network.

Key concepts of the Advantaged Node Technology are:

- Avoiding congestion in nodes that have significantly better connectivity to the members of a target sub network, than does the average node -- for example airborne nodes. Congestion may typically happen in such nodes, because all shortest path routes would tend to flow through this highly connected node. The Advantaged Node Protocols attempt to alleviate this congestion by discovering and manipulating the connectivity at layer 2 in order to create a network topology at layer 3 that only routes certain classes of service through the advantaged nodes.
- Avoiding routing instabilities in nodes with an advantaged position but have dynamic or intermittent connectivity, for example a low moving helicopter. This type of node is considered a disadvantaged node.
- And, taking advantage of nodes with links to additional sub networks, which may offer, for example, long-range one-hop, communications to a similar node in a distant part of the original sub network.

The work on this program started with using the ANT concept and defining the requirements for the software. Work progressed through the software design, modeling, and development. After successful testing and demonstration in the lab environment, the software was ported to a military communications radio. The radios were placed in vehicles in a field test environment and the technology was successfully demonstrated to potential end users. This technology is intended to play a key role in the communications infrastructure of advanced military radios of the future.

During the program, Genova engineers provided the following services:

- Assist with requirements definition
- Design of the communications software and routing protocol implementation
- Development and coding of the communications software
- Support for execution of the developed code in modeling software packages
- Design the interfaces to allow the software to be installed and configured on the target radios
- Testing within the development lab
- Work with radio hardware engineers to install and configure the software on target radios
- Support for both lab and field demonstrations.

Genova engineers worked closely with Rockwell Collins engineers throughout this project to support the development and, in particular, the integration of the new communications software onto the target radios.

DATA MODELING

Genova has certified database administrators on staff. We have Oracle Certified and Microsoft Certified Application professionals on staff. Collectively, they have over 40 year's industry experience. Following are highlights of projects they have worked on while at Genova:

Iowa DNR
This tool tracks the effluent and influent flow of chemicals deposited into water areas. The program is designed to generate permits for facilities that are requesting to dump pollutants into the water and then tracks the mandatory reports submitted by companies to ensure compliance with environmental regulations.

- Modeled a pollution discharge measurement system in SQL Server that included an XML export to the EPA database.
- Data modeling to convert an IDMS mainframe database to Microsoft SQL Server
- Data modeling to make necessary change to the Microsoft SQL Sever database to Configure it for One Stop Initiative

Siemens
Genova enhanced an existing application to dispatch and track Freeway Service Patrol and Traffic Management Teams. The Freeway Service Patrol consists of tow trucks that are contracted during rush hour traffic to provide assistance to motorists. This assistance can come in the form of a gallon of gas, towing of the vehicle, to transporting of occupants of the vehicle to ensure traffic congestion is minimized. Traffic Management Team vehicles also aid motorists by

raising a sign on their trucks to inform motorists that they are approaching a potential traffic incident. These incidents can range from lane closures to detours.

The existing application was used for one-way assignment of incidents from the dispatcher to the vehicles for Police, Fire, and Ambulance. The new development consists of new incident types and the ability of a vehicle operator that discovers an incident to assign himself to that incident while keeping Supervisor vehicles and Dispatch informed of the incidents, their progress, and locations. The vehicles are tracked on an on-screen map and the incident status is tracked and updated on a separate screen as they respond, arrive at the scene, or complete the incident.

Some of the tasks Genova assisted with are:

- Remapped the data model for a SQL Server database to Oracle converting all entities including tables, views, stored procedures
- Created SQL Server data model for traffic assistance package that modeled support vehicle locations, accidents, and traffic flow incidents.
- Designed to Siemens' database design standards.

Rockwell

Genova developed a common tool to compile assumptions for marketing and sales of aircraft for their Commercial Systems. This new tool was to take six long-term sales and forecast processes and methods across six different business units and consolidate them into one process to support the forecast and variety of requests from managers.

Specific tasks performed by Genova included:

- Provide a common tool to compile Rockwell's assumptions for Market & Sales forecasting for aircraft across six divisions.
- Perform analysis between using SQL Server vs. Microsoft Access
- Allows analysis across the Commercial Service Business
- To Convert 6 Microsoft Excel spreadsheets from six divisions into one process using Microsoft Access.
- Allow import of information from other database's and Microsoft Excel spread sheets
- Allow Data entry of information
- Create reports in Microsoft Excel
  - *Allowed the users to do "what if" scenarios without changing the forecast data.*
  - *Allowed the user to do ad hoc reporting from the information dumped to Microsoft Excel.*

Union Pacific Railroad

Genova created this database driven application allowing locomotives to wirelessly report their location and locomotive health. The application's responsibility was to capture this data, store it in the database, and display to dispatchers any potential mechanical problems that the locomotive was reporting. The goal of the system was to be able to know about mechanical problems before the locomotive came into the depot, so that the necessary parts could be waiting.

The Genova team designed and implemented the Oracle database for storing health information on the various systems installed on a locomotive. This included designing and documenting the Entity Relationship Diagram, Data Dictionary, and DML script. Genova was also responsible for installing the Oracle 7 database server for client. Client tools utilized Visual Basic and ODBC to access the database tables. The database was critical to the success of the project, because much of the data had several inter-dependencies and unknowns. Union Pacific was so impressed with the database design and implementation, that they copied it for some of their other systems (i.e. railroad cars), to do similar applications.

General

Learning and Training Strategic Consulting

Our experienced teams are dedicated to assisting you in analyzing and clarifying business objectives, resulting in successful custom solutions. Every custom solution begins with defining and understanding the audience, available instructional technology (LMS/LCMS), standards (SCORM and 508 compliance) company culture, initiatives, and desired results.

Training Content Development Conversion

Transforming a storyboard, script, or manual into e-learning modules involves more than a simple cut-and-paste process. Off-the-shelf e-learning authoring tools can provide limited interaction and customization. With our custom development solution, a team of developers transforms your content from static text into engaging learning objects, enhancing knowledge transfer resulting in greater retention. We have SCORM and 508 compliancy expertise. *We can convert:*

- PPT, Word or Excel to a web-based module or modules (deployed on our LMS or yours)
- Authorware modules to a web-based module or modules
- Toolbook to a web-based module or modules (deployed on our LMS or yours)
- Video presentations (VHS) to a web-based module or modules (deployed on our LMS or yours)

Training Content Conversion

With our content conversion and development solution, a team of developers can transform your manuals or existing classroom-based training materials. We can supplement your training materials by converting only those pieces/modules that are able to be delivered over Internet.

Our solution is custom and we focus on making sound instructional decisions when converting existing training materials. For example, we do not suggest converting ALL of your classroom-based training materials simply for the sake of putting training on the Internet. We have SCORM and 508 compliancy expertise. *We can convert:*

- Once we analyze your content, audience and delivery goals,
- Testing or quizzes for delivery on the Internet (with custom reporting)
- PPT, Word or Excel to compliment your classroom-based materials
- Video presentations (VHS) to a web-based delivery mode

FACILITATING AND CONSULTING

Genova teaches a requirements analysis and adaptive software development training course, entitled “Managing Projects in ‘Internet Time’”. This training focuses on how to create a productive, satisfying work environment while managing a project from the initial requirements capture phase through to final testing and delivery. The training is divided into four major topic areas. The first area focuses on how to start a project right by kicking off planning the project, defining the mission of the project, and how to execute the initial requirements analysis phase.

The second area then focuses on an in depth requirements capture, development, and analysis methodology. This methodology also can prove completeness of the requirements. This is the most detailed part of the course.

The third section of the course then deals with how to manage a project using the software adaptive lifecycle development process. The waterfall development process has been the standard for several decades. This process works well when all of the requirements are known up front, and the requirements do not change. For most modern projects, the waterfall process does not work well because the users do not know all of the requirements up front, and may actually change during the software development process. This is where the adaptive lifecycle development process shines. This methodology is iterative, and allows the development team to make “course corrections” to requirements and design during the development process; thereby producing a product that the customer wants and needs while staying within budget and schedule.

The last section of the course is entitled “Teamicide: How to Kill Otherwise Happy, Productive People and Projects.” This part of the course focuses on the results of a twenty-year study that showed that most IT projects fail due to politics, not technology. The study found that for each failure, there was always a technological solution; the failure was due to politics such as hidden agendas/motives, disenchantment with a customer, unclear requirements, etc. This part of the course focuses on how to avoid political problems with cause “teamicide” and to help projects be successful while also providing a fun, productive work environment for the team.

PHOTOGRAMETERY AND REMOTE SENSING

Not Applicable.

DATA COLLECTION

Timecard Tracking System
Genova designed and implemented an Oracle database for time card record keeping. This included designing and documenting the Entity Relationship Diagram, Data Dictionary, and DML script. Genova was also responsible for installing the Oracle 8 database server. Client tools utilized Visual Basic and Oracle Objects for OLE to access the database tables. This project involved migrating data and code from SQL Server to Oracle to MySQL.

Repair Tracking System
Genova designed and implemented an Oracle database for tracking repair data performed on aircraft systems. This included designing and documenting the Entity Relationship Diagram,

Data Dictionary, and DML script. Client tools utilized Visual Basic and Oracle Objects for OLE to access the database tables.
Genova assisted The National Cancer Institute and the University of Iowa (from now on, referred to as just "NCI") with the development of an application for their abstractors to gather cancer data. Abstractors go from hospital to hospital collecting data from cancer cases so that NCI can perform statistical analysis on the data. NCI had two major problems with their existing tool. First, it had several bugs that were slowing down the abstractors so that they were collecting less data. Secondly, NCI had a requirement to be able to gather quickly new information in accordance with the College of Surgeons guidelines. For example, if the College of Surgeons wants data collected on cancer patients who live within fifty miles of a nuclear plant, the tool needed to be quickly adaptable to gather this new information. NCI's existing tool was not quickly adaptable, and the company owning the tool would take months to respond to new requirements.

National Cancer Institute
This project was on a tight schedule, since the budget for development was the budget allocated to buy the license for the existing tool for the following year. Therefore, if Genova did not finish the project on time, NCI would be in a bind, because the money to buy licenses for the existing tool would have been spent on development and NCI would be left with no abstracting tool. NCI hired Genova to gather, develop, and analyze the requirements of the tool, then to develop, test, and deploy the new tool. Genova met with the NCI staff and investigated the existing tool to document the initial requirements.

The abstractors needed to have a tool that would present to them different data fields to allow them to answer different questions as the College of Surgeon special studies dictated. To fulfill this requirement, Genova used a new technology (XML) in a new, unproven way. Genova identified this high-risk requirement early in the development process and began designing for it. The adaptive lifecycle development process methodology requires high-risk requirements to show an early proof-of-concept so that the risk can be mitigated early. This is what Genova did. Genova showed a successful proof-of-concept of this high-risk requirement during the first 4-6 week cycle that helped set the course for the rest of the project.

The NCI Abstracting tool was finished on-time, in-budget, with complete documentation showing the traceability of requirements from the initial requirements capture documents, through to the design documents, into the code, and finally into the test plan and procedures. The abstractors commented that they were able to complete 50% more abstracts with the new tool and that they were very satisfied.

Chicago Maps ActiveX Tools Document Management
This project demonstrates Genova's ability to deliver requirements engineering services, including requirements capture, development, analysis, and management. This project also demonstrates that Genova's requirements methodology is useful for not only projects to be developed, but also for the purchase of COTS (commercial-off-the-shelf) software.

The Defense Commissary Agency (DeCA) had funding to purchase a Records and Documents Management System. A DeCA resource assigned to gathering the requirements to produce the RFP was tasked with maintaining the existing, antiquated records and documents management

system. Due to multiple problems in the existing system, the DeCA employee had fallen far behind schedule in developing the requirements for the new system. He was so far behind, that DeCA was faced with the prospect of losing their funding if the RFP and its responses could not be completed in a timely manner.

DeCA asked Genova to help them quickly develop solid requirements for their new records and documents management system. The Genova team worked with the DeCA staff and DeCA users to develop the requirements. This project was also "politically charged" because records and documents management crossed many domains, and each user domain had strong opinions on how the new system should work. The Genova team not only quickly developed the requirements, but also successfully navigated the political minefield, as stated by an email from the DERMAS Project Manager:

> *As discussed today on the phone, I cannot tell you how valuable Jim has been to the DERMAS effort. I do not know if anyone can save this ship, but Jim sure has been terrific since Day One, coming into a seemingly hopeless situation. His determination, skills, ethics, professionalism, manners (believe me, these came in terribly handy), and ability to stay on track and press forward (amongst the confusion and lack of direction), are just what the DERMAS doctor ordered. He has been positively instrumental in helping to connect a lot of the dots around this place, and he is to be commended…Although we are not through with him (!), I just wanted to take the time to thank you. It is a pleasure to work with Jim.*

GIS / ESRI Software / MapInfo

Not Applicable

Electronic Commerce / EDI

Genova has not had any direct EDI experience, but has researched it and worked with similar technologies.

Telecommunications Wide Area Network

Genova contracted to analyze and build a worldwide remote office network for Naval Exchange Services Command (NEXCOM). When Genova began working on the project in 1993, the 100+ NEXCOM facilities had no connectivity amongst themselves. This resulted in several homegrown applications developed at each location. Many of the applications performed the same functionality, but were running on different platforms, written in multiple languages and accessing disparate databases. It was Genova's task to unify and integrate these systems.

The system delivers office productivity applications, email, and network file and print services to 3000 users around the world using 60 Solaris servers and 1500 PC workstations. This project required very careful planning due to the business requirement that all system administration had to be done by personnel stationed at the corporate headquarters; there would be no technical support at each remote site. A difficult technical hurdle resulted from the client's requirement to use Sun's NIS+. This meant that two Sun Sparc servers were required at each site, according to Sun's recommendation to eliminate risk of system unavailability caused by WAN outages. Genova's network integration experts worked with Sun Consulting to develop

custom PC client management software and modified authentication code to eliminate this two-server requirement. In addition, Genova created customized tools to allow the core group of administrators at the corporate headquarters to manage the entire network. Reducing the number of servers at a site from two to one and providing a centralized management system with greater controls operated by just 10 employees ***generated cost savings of $1 Million the first year alone***. These reductions were accomplished by integrating COTS and custom software. The Genova innovations are now included in the Sun releases.

BIOMETRICS

Genova has done extensive research in the field of Biometrics, but has not had the opportunity to apply it either internally or for a client.

WIRELESS NETWORKING

Genova developed a world-class application as part of an onboard information network, providing an international transportation customer with a unique system that provides in-flight wireless access to information onboard a server on the aircraft as well as information available on the Internet. Using this technology, airline customers can surf the Internet or check their email while in flight.

Crewmembers can also use the system to support applications that eliminate many of the paper forms required upon arrival and before departure. Using the system's wireless LAN, these applications exchange data between the aircraft and the airline's network at the airport, enabling the airline to save both time and money.

The Wireless LAN Manager (WLM) provides management and health monitoring of the wireless LAN hardware within the unique environment of the aircraft. WLM ensures that the wireless LAN is disabled during critical phases of flight. When the wireless LAN is enabled, WLM ensures that it is operating at a frequency legal in the country where the aircraft is currently located.

WLM is a complex software development effort that requires frequent communication with others involved in the development of the total system, to define the many external interfaces WLM is required to support. WLM supports the following external interfaces:

- SNMP communication with the wireless hardware
- Proprietary communication with the wireless hardware
- Interfaces to two CORBA service processes
- Interface to a discrete I/O driver
- Interface for secure communications to an avionics data controller unit
- SNMP communication with SNMP manager applications
- Interface to an Oracle database
- Interface to XML files for configuration data

Because of the many external interfaces, the application design was required to be multi-threaded to prevent delays in communication over the interfaces. Genova implemented several design patterns within the application to meet performance requirements and provide flexibility as external interfaces changes over the life of the program.

Initial development began with the use of a third party library to handle the direct communication with the wireless hardware. After some early testing, it was determined that the third party library could not support all the requirements. Genova developed a replacement library that required a detailed understanding of how to configure and communicate with the wireless hardware. The new library met all requirements, ***delivered a 10-fold increase in performance,*** and is estimated to ***save the customer approximately $2 million*** over the life of the program.

WLM was initially targeted to run only on the Windows operating system. Recent efforts have required a port to run on Linux. Due to up-front design considerations at the beginning of the project, porting the existing application to Linux was accomplished in approximately 6 weeks.

During development of the WLM application, Genova engineers provided the following efforts:

- Software requirements definition and documentation
- Complete software design of the application and some of the external interfaces with required design documentation
- Software development and coding
- Unit testing of all code
- Software acceptance test plan and procedures documentation
- Support for system integration with actual hardware both locally and in Toulouse, France.
- Installation and configuration support documentation

WLM is currently in production and has been installed on commercial aircraft.

This project highlights many of Genova's abilities to design and develop a complex, yet robust, software application and provide support throughout the project to make it a success.

IT STAFFING

Genova has a recruiting department that supplements the IT staffing needs of our customers locally and nationwide. Genova understands that hiring managers are already overwhelmed with other responsibilities and commitments and we are deeply committed to saving them time by submitting only highly qualified candidates. Our rigorous screening process has resulted in over 80% of candidates presented being made an offer.

Generally, one of the drawbacks of using supplemental staff to perform on projects is that when their assignment is over and they move on to their next assignment, the project knowledge goes with them. Genova mitigates this issue in two ways. First, whenever possible, Genova assigns a full-time permanent Genova employee to work with the supplemental staff so that Genova retains the knowledge base. Genova has an extremely high employee retention rate. Customers have contacted us years after the completion of a project and were able to speak to original project team members. The second way Genova helps prevent knowledge loss is by scheduling a meeting with the departing contractor(s) for a project review prior to their departure. This extra effort helps our clients long after the project concludes.

GRAPHIC / WEB DESIGN

Genova has developed several cutting edge web applications that include various functions including data gathering, reporting, and analysis over the web. In order to provide full support to our customers, security services include Internet Firewalls, Secure Web Servers, and Intranet and Extranet site development and clearly defined portal development applications that restrict access and privileges.

OTHER

Continuing Education System

Genova, in partnership with the University of Iowa, won a SBIR (Small Business Innovation Research) grant to develop a tool to address the problem of medical errors due to the omission of using guidelines.

Genova provided the technical abilities in database design, database administration, data load balancing, web server technology expertise, intuitive Graphic User Interface design, current off-the-shelf technologies, and networking expertise. The University of Iowa provided clinical medical consulting expertise and guidance during the design phase and crucial field-testing of the now patented WebCE tool.

WebCE allows the physician to gain access to new medical information and standardized medical practices while receiving CME credits during his/her clinic day. The Physician gains this information (and CME credit) in granules as small as one-two minutes. Physicians can even obtain more credits on a subject by requesting links to be sent to them at the end of the clinic day.

The Genova team worked with groups of physicians to determine their requirements, and then designed and built WebCE. Genova also worked with the AMA to insure that the new system would meet AMA CME guidelines.

Invitation to Qualify

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Contact
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Dir. Business Development
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Woman-Owned Small Business

DUNS
92-985-2820

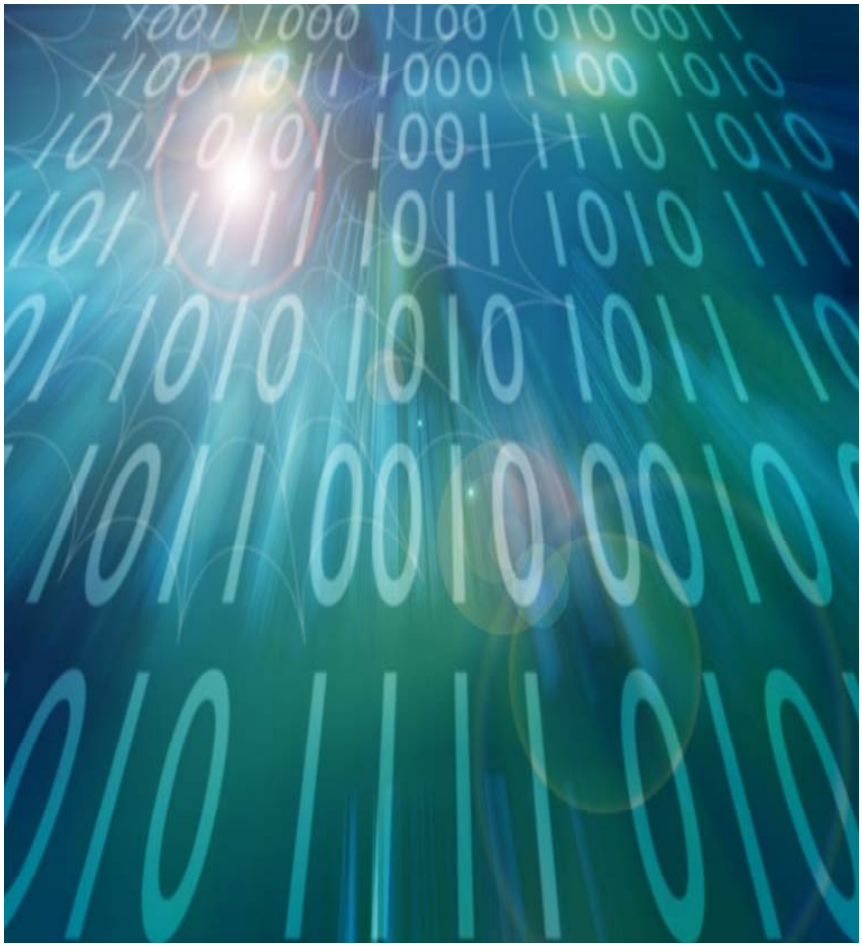
CMS BPA
HHSM-500-2005-00001B

GSA Schedule 70
GSA GS-35F-0303M

NAICS Codes
518210, 541511, 541512, 541519, 54171, 541330, 541611, 611420, 611430

RFP BD80200S102

Training



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1. PROVIDING RESOURCES

How do you intend to provide the resources required by this ITQ?
Genova has a Resource Planning Team that is responsible for coordinating all resources for current and future projects. The committee meets at least once a week to discuss the progress on existing jobs as well as any potential projects for the future. The Committee utilizes Microsoft Project to organize and track the company's various projects and resources. With this process, Genova has the ability to plan for all projects and resource needs well in advance. This ensures that the company is able to meet all personnel requirements in a timely manner.

2. CONTRACT ADMINISTRATOR

Identify the SP contract administrator and describe the functions that person will perform.
Ann Fleckenstein will act as the contract administrator. Her contact information is as follows: Genova Technologies, 5250 North River Blvd NE, Cedar Rapids, Iowa 52411; (319) 378-8455; ann.fleckenstein@genovatech.com

The contract administrator (CA) will be responsible for the overall performance of the contract in accordance with contractual requirements as well as Genova company policies. The CA will have full responsibility and authority in all areas necessary for the accomplishment of the mission and will be the primary point of contact for business negotiations.

The CA will transition each project over to a Project Manager (PM) who will become the primary point of contact for the technical aspects of the project. The PM will direct staff in areas of cost, schedule, technical performance, impact analysis, software quality assurance, management, project controls, and project administration. Inherent responsibilities include providing and submitting all plans, records, reports, and data to the customer in accordance with Genova policies and contractual requirements. The CA and PM will maintain liaison with State officials regarding the operational and contractual aspects of the project.

3. PROVIDING ADDITIONAL PERSONNEL

Describe how you plan on providing additional personnel if it becomes necessary to properly staff projects.
As discussed in question 1, Genova has a Resource Planning Team that meets regularly coordinate current and future resource needs.

In addition, Genova has an internal Recruiting Department that works closely with Genova's Resource Planning Team to anticipate vacancies and surge requirements in sufficient time to identify replacement or supplemental candidates.

Another approach Genova uses is to partner with organizations and companies that can provide extensive experience or additional personnel that would be a "fit" for the project. While these companies may compete with Genova in some areas, there can be significant benefits to working together as a team. We refer to this relationship as "co-peting". By forming these partnerships, Genova provides our customers with the best possible team to perform the work.

4. ABILITY TO ADDRESS ISSUES

Describe your company's ability to uniquely address problems and issues related to the service category.

Genova's premier differentiator is the ability to quickly and thoroughly document all system and project requirements with its proprietary technique. Genova is able to track each requirement from analysis, to design, development, testing, and documentation. As new requirements or risks are uncovered, their impact to the schedule and/or budget is discussed with the customer. An adaptive lifecycle approach enables Genova to make the necessary adjustments throughout development, resulting in a final project that exactly suits the customer's needs and adheres to both schedule and cost.

As a small business, Genova takes a personal interest in the success of its customers' projects that often larger organizations can not replicate. Genova's references show that Genova consistently provides a high level of responsiveness, reliability, and flexibility. Genova utilizes project management techniques and methodologies adapted from industry standards and best-practices such as the Project Management Institute' *Body of Knowledge*.

Genova is committed to maintaining effective, consistent communication with the customer throughout all stages of the project. Genova uses a variety of methods to keeping the client involved. Genova submits status reports at regular intervals. Frequent meetings are scheduled to review progress, plan strategies, or mitigate risks. In addition, there are phone calls, emails, and secure access to project information online. Genova has a virtual private network (VPN) solution in place to provide the project team access to project information from the office, home, or while traveling. Genova is also implementing an Enterprise Project Management solution that will allow customers to view project information online 24 hours a day.

TRAINING

Genova schedules training as part of the project lifecycle to ensure that customers fully understand how to most effectively use the new application or tool that was developed for them. These tools are developed to be very intuitive, so necessary training is minimal. In addition, Genova supplies the customer with full documentation and user manuals so that the customer can be as self-sufficient as possible at the conclusion of the project.

In addition to project-related training, Genova also provides other custom-developed classes on object-oriented programming, requirements gathering, and project management.

One of Genova's most popular classes entitled, "*Teamicide: How to Kill Otherwise Happy Productive People and Projects"*, addresses political issues of a project that can often derail a project that would otherwise be successful and beneficial to the organization. Studies have shown that "politics" cause a project's failure more often than technology failures. "Politics" includes items like hidden agendas or motives, unclear requirements or specifications, etc. This course helps management facilitate the cultural changes that must accompany process and policy changes.

Genova has delivered these courses to The Internal Revenue Service, Centers for Medicare and Medicaid Services, the Department of Veterans Affairs, the University of Iowa, and Rockwell Collins. Class reviews have commented that this class was one of the most valuable classes the students had ever attended.

5. ADOPTING CLIENT POLICIES

Describe your company's practices in adopting client policies and methods.
When beginning a project, Genova requests a copy of the customer's relevant coding standards and any document templates that will be utilized. When the Project Manager sees a value departing from the standard, the issue is discussed with the client. The Project Manager is also responsible for ensuring that the client's quality control and security standards are followed.

Genova has developed a Quality Assurance Manual that includes coding standards, project management methodologies, and other quality procedures. Genova will employ its own policies whenever clients do not have their own in place. If the two policies are in conflict, Genova will defer to the client's policies, unless a real value is gained by veering away from the policy. In this situation, Genova would discuss the advantages of altering the policy with the client and allow the client to make an informed decision regarding which policy to adhere to.

6. OPERATING & COMMUNICATION SYSTEM EXPERIENCE

List each type / brand of operating system/ communication system you are experienced with in each category below and make comments.

System	Experience	Independent Performance	Ability to Teach
Mainframe	Limited	Yes	No
Midrange / Minicomputer	Sun Solaris – Decades of combined experience. Ulta 1, 250, 450 class	Yes	Yes
Client / Server / Distributed Systems	Windows, Unix, Linux, NT	Yes	Yes
Desktop	Windows 9x/NT/2000, Linux, Solaris, ME	Yes	Yes
LAN	Solaris, Microsoft, Novell, NT, 2000, Linux Naming services – DNS, NIS, NIS+, NDS and small amount of LDAP.	Yes	Yes
Languages and DBMS	C++, Visual C++, Borland C++ Builder, C, C#, Java, Ada, ASP.Net, ASP, VB, HTML, XML, Cold Fusion, Crystal Reports, CORBA, COM/DCOM, Portal/Internet Development,	Yes	Yes
Model Based Development	MATLAB/Simulink	Yes	Yes

7. DATABASE EXPERIENCE

Describe your products / experience with Databases.

Product	Experience	Independent Performance	Ability to Teach
Administration	Oracle Certified, SQL Server Certified, Microsoft Access, and ODBC client connections	Yes	Yes
Application Development Tools	Used many languages to create client and web applications tied to databases, SQLAPI with C++ and native Oracle	Yes	Yes
End User Tools	WebCE, Timecard,	Yes	Yes
Structure & Methodologies	UML, N-Tier, EA,	Yes	
Other	SQL statements; ODBC, JDBC.	Yes	Yes

Additional Information

Our company has over 10 years of experience with database design and development with various databases including Microsoft Access, Oracle, Microsoft SQL Server, Progress, DB2, and IDMS.

Our Database administrators are certified in Oracle and Microsoft SQL server 7.0 and 2000. The figure below shows some of the database expertise and services available from Genova.

Database Administration

These types of services would likely be needed by companies that have don't have a full time DBA on staff.

1) **Database set up**
   a) Check for adequate redundancy of control files and redo logs
   b) Proper sizing of roll-back segments and data files
   c) Check for file contention
   d) File striping
2) **Back up**
   a) Review backup/ recovery strategy
   b) OS Scripts for shut-down/backup/startup
   c) Archive redo logs
3) **File Reorganization**
   a) Tables
   b) Indexes
4) **Users**
   a) Password maintenance
   b) Privilege/Role/Profile maintenance
5) **Alert Files**
   a) Check/clean up Alert and Trace files

Database Tuning

These types of services are much more time intensive. Hence, even when a DBA is on staff, they may not have the opportunity to work through the testing required. They are listed in order of diminishing return.

1) **Operating System**
   a) CPU Usage
   b) Memory Usage
2) **System Global Area**
   a) Check sizing of SGA, Shared Pool, Data Dictionary Cache and Library Cache
   b) Tune Buffer cache
   c) Tune Redo Log buffer
3) **I/O**
   a) Tune Checkpoints
   b) Tune background processes
   c) Reallocate/ Reorganize table-spaces
   d) Tune Sort area and Temporary table-space
   e) Tune Rollback segments
4) **Locks and Latches**
   a) Check for contention

Application Tuning

These types of services are much more time intensive. Hence, even when a DBA is on staff, they may not have the opportunity to work through the testing required. This could be done before an application went into production or, assuming the source was available, could be part of an ongoing tuning process. The most effective tuning is done here.

1) **SQL Statements**
   a) Test and recommend changes to application SQL statements
   b) Write packages that may could replace code based SQL calls
   c) Pin packages in memory.
2) **Indexes**
   a) Select most efficient index for application

All of these services assume a single server implementation. Partitioned and possibly multithreaded servers may require special consideration.

ORACLE | PARTNER PROGRAM

8. SOFTWARE EXPERIENCE

What general software applications have you experience in?
Genova's staff averages 15 years industry experience. Genova has created custom software solutions for clients in banking, medical, transportation, communication, and government industries. Genova's unique approach has saved customers millions of dollars.

Application Development
Application development includes multi-tiered, client/server, and web services applications across diverse environments including Windows, Linux, Unix, and embedded operating systems. Genova has extensive experience in leading databases and programming languages. To better server our clients, Genova is committed to staying current with emerging trends and technologies.

Network Design and Remote Management
Genova has developed several WAN and LAN implementations. Networking connections included traditional LAN and WAN protocols as well as wireless and satellite transmissions. Genova also provides remote management over a virtual private network (VPN). This has proven to be the most cost effective solution for our clients that need technical assistance for undetermined times, upon their request.

System Integration
Genova designed, developed, and implemented a worldwide system integration effort that involved a multi-vendor legacy platform environment. This was a global application and installation that included customization of Commercial Off the Shelf (COTS) software. After the successful deployment of the application, Genova has been retained on a consulting services basis to provide support as needed for over eight years.

Web-Based Application Development
Genova has developed several cutting edge web applications that include various functions including data gathering, reporting, and analysis over the web. In order to provide full support to our customers, security services includes Internet Firewalls, Secure Web Servers, Intranet and Extranet site development and clearly defined portal development applications that restrict access and privileges.

9. OTHER EXPERIENCE

Please describe any experience and deployed solutions in each of the following specific technologies below.

Item	Experience	Independent Performance	Ability to Teach
a) Help desk solutions / technologies	See detailed experience below	Yes	Yes
b) Data development	See detailed experience below	Yes	Yes
c) Data modeling	See detailed experience below	Yes	
d) Facilitating and consulting	See detailed experience below	Yes	Yes
e) Photogrametery and remote sensing	See detailed experience below	NA	NA
f) Data collection and clean up mapping	See detailed experience below	Yes	Yes
g) GIS / ESRI Software / Mapinfo	NA	NA	NA
h) Electronic Commerce / EDI	NA	NA	NA
i) Document management	NA	NA	NA
j) Telecommunications wide area network	See detailed experience below	Yes	Yes
k) Biometrics	NA	NA	NA
l) Wireless networking	See detailed experience below	Yes	Yes
m) IT staffing	See detailed experience below	Yes	Yes
n) Graphic / web design	See detailed experience below	Yes	Yes
o) Other	See detailed experience below	Yes	Yes

HELP DESK SOLUTIONS / TECHNOLOGIES

Genova assisted a group within the Department of Defense (DoD) with policies and plans for deploying their IT help desk. This group had distributed, regional help desks, but had been mandated to consolidate and form a centralized help desk at headquarters. This problem required new IT policies and plans. Next, Genova examined help desk industry standards, and the tools and infrastructure available to DoD to solve this problem. One of the leading industry standards for managing a help desk is called ITIL – IT Infrastructure Library. It covers much more than help desk, but is a good basis for developing many infrastructure standards. DoD's help desk system was Remedy™, which is based on ITIL standards. Since the help desk system was in alignment with a proven industry standard, Genova began aligning policies and plans to meet standards. Genova also needed to modify the standards to fit the DoD and its user community. Finally, DoD did not have funding to purchase all of the functionality available in Remedy; therefore, Genova assisted with modification of their policies and plans to fit that subset of functionality. Genova also wrote software to communicate between disparate help desk technologies across the Internet.

DATA DEVELOPMENT

This project highlights Genova's ability to work closely with technology partners in all phases of a project from concept to full integration and testing.

The Advantaged Node Technology (ANT) project is a component of the Multifunctional On the Move Secure Adaptive Integrated Communication (MOSAIC) Advanced Technology Demonstration (ATD) program. The goal of the MOSAIC program was to develop and demonstrate a suite of protocols for providing end-to-end communication services across mobile ad-hoc military networks with assured throughput, latency, and dependable delivery. In particular, this advantaged node technology utilized the enhanced visibility of elevated nodes (or nodes connected to other networks) in a manner that increases the overall capabilities of the network.

Key concepts of the Advantaged Node Technology are:

- Avoiding congestion in nodes that have significantly better connectivity to the members of a target sub network, than does the average node -- for example airborne nodes. Congestion may typically happen in such nodes, because all shortest path routes would tend to flow through this highly connected node. The Advantaged Node Protocols attempt to alleviate this congestion by discovering and manipulating the connectivity at layer 2 in order to create a network topology at layer 3 that only routes certain classes of service through the advantaged nodes.
- Avoiding routing instabilities in nodes with an advantaged position but have dynamic or intermittent connectivity, for example a low moving helicopter. This type of node is considered a disadvantaged node.
- And, taking advantage of nodes with links to additional sub networks, which may offer, for example, long-range one-hop, communications to a similar node in a distant part of the original sub network.

The work on this program started with using the ANT concept and defining the requirements for the software. Work progressed through the software design, modeling, and development. After successful testing and demonstration in the lab environment, the software was ported to a military communications radio. The radios were placed in vehicles in a field test environment

and the technology was successfully demonstrated to potential end users. This technology is intended to play a key role in the communications infrastructure of advanced military radios of the future.

During the program, Genova engineers provided the following services:

- Assist with requirements definition
- Design of the communications software and routing protocol implementation
- Development and coding of the communications software
- Support for execution of the developed code in modeling software packages
- Design the interfaces to allow the software to be installed and configured on the target radios
- Testing within the development lab
- Work with radio hardware engineers to install and configure the software on target radios
- Support for both lab and field demonstrations.

Genova engineers worked closely with Rockwell Collins engineers throughout this project to support the development and, in particular, the integration of the new communications software onto the target radios.

DATA MODELING

Genova has certified database administrators on staff. We have Oracle Certified and Microsoft Certified Application professionals on staff. Collectively, they have over 40 year's industry experience. Following are highlights of projects they have worked on while at Genova:

Iowa DNR
This tool tracks the effluent and influent flow of chemicals deposited into water areas. The program is designed to generate permits for facilities that are requesting to dump pollutants into the water and then tracks the mandatory reports submitted by companies to ensure compliance with environmental regulations.

- Modeled a pollution discharge measurement system in SQL Server that included an XML export to the EPA database.
- Data modeling to convert an IDMS mainframe database to Microsoft SQL Server
- Data modeling to make necessary change to the Microsoft SQL Sever database to Configure it for One Stop Initiative

Siemens
Genova enhanced an existing application to dispatch and track Freeway Service Patrol and Traffic Management Teams. The Freeway Service Patrol consists of tow trucks that are contracted during rush hour traffic to provide assistance to motorists. This assistance can come in the form of a gallon of gas, towing of the vehicle, to transporting of occupants of the vehicle to ensure traffic congestion is minimized. Traffic Management Team vehicles also aid motorists by raising a sign on their trucks to inform motorists that they are approaching a potential traffic incident. These incidents can range from lane closures to detours.

The existing application was used for one-way assignment of incidents from the dispatcher to the vehicles for Police, Fire, and Ambulance. The new development consists of new incident types and the ability of a vehicle operator that discovers an incident to assign himself to that incident while keeping Supervisor vehicles and Dispatch informed of the incidents, their progress, and locations. The vehicles are tracked on an on-screen map and the incident status

is tracked and updated on a separate screen as they respond, arrive at the scene, or complete the incident.

Some of the tasks Genova assisted with are:

- Remapped the data model for a SQL Server database to Oracle converting all entities including tables, views, stored procedures
- Created SQL Server data model for traffic assistance package that modeled support vehicle locations, accidents, and traffic flow incidents.
- Designed to Siemens' database design standards.

Rockwell

Genova developed a common tool to compile assumptions for marketing and sales of aircraft for their Commercial Systems. This new tool was to take six long-term sales and forecast processes and methods across six different business units and consolidate them into one process to support the forecast and variety of requests from managers.

Specific tasks performed by Genova included:

- Provide a common tool to compile Rockwell's assumptions for Market & Sales forecasting for aircraft across six divisions.
- Perform analysis between using SQL Server vs. Microsoft Access
- Allows analysis across the Commercial Service Business
- To Convert 6 Microsoft Excel spreadsheets from six divisions into one process using Microsoft Access.
- Allow import of information from other database's and Microsoft Excel spread sheets
- Allow Data entry of information
- Create reports in Microsoft Excel
  - *Allowed the users to do "what if" scenarios without changing the forecast data.*
  - *Allowed the user to do ad hoc reporting from the information dumped to Microsoft Excel.*

Union Pacific Railroad

Genova created this database driven application allowing locomotives to wirelessly report their location and locomotive health. The application's responsibility was to capture this data, store it in the database, and display to dispatchers any potential mechanical problems that the locomotive was reporting. The goal of the system was to be able to know about mechanical problems before the locomotive came into the depot, so that the necessary parts could be waiting.

The Genova team designed and implemented the Oracle database for storing health information on the various systems installed on a locomotive. This included designing and documenting the Entity Relationship Diagram, Data Dictionary, and DML script. Genova was also responsible for installing the Oracle 7 database server for client. Client tools utilized Visual Basic and ODBC to access the database tables. The database was critical to the success of the project, because much of the data had several inter-dependencies and unknowns. Union Pacific was so impressed with the database design and implementation, that they copied it for some of their other systems (i.e. railroad cars), to do similar applications.

General

Learning and Training Strategic Consulting

Our experienced teams are dedicated to assisting you in analyzing and clarifying business objectives, resulting in successful custom solutions. Every custom solution begins with defining and understanding the audience, available instructional technology (LMS/LCMS), standards (SCORM and 508 compliance) company culture, initiatives, and desired results.

Training Content Development Conversion
Transforming a storyboard, script, or manual into e-learning modules involves more than a simple cut-and-paste process. Off-the-shelf e-learning authoring tools can provide limited interaction and customization. With our custom development solution, a team of developers transforms your content from static text into engaging learning objects, enhancing knowledge transfer resulting in greater retention. We have SCORM and 508 compliancy expertise. *We can convert:*

- PPT, Word or Excel to a web-based module or modules (deployed on our LMS or yours)
- Authorware modules to a web-based module or modules
- Toolbook to a web-based module or modules (deployed on our LMS or yours)
- Video presentations (VHS) to a web-based module or modules (deployed on our LMS or yours)

Training Content Conversion
With our content conversion and development solution, a team of developers can transform your manuals or existing classroom-based training materials. We can supplement your training materials by converting only those pieces/modules that are able to be delivered over Internet.

Our solution is custom and we focus on making sound instructional decisions when converting existing training materials. For example, we do not suggest converting ALL of your classroom-based training materials simply for the sake of putting training on the Internet. We have SCORM and 508 compliancy expertise. *We can convert:*

- Once we analyze your content, audience and delivery goals,
- Testing or quizzes for delivery on the Internet (with custom reporting)
- PPT, Word or Excel to compliment your classroom-based materials
- Video presentations (VHS) to a web-based delivery mode

FACILITATING AND CONSULTING

Genova teaches a requirements analysis and adaptive software development training course, entitled “Managing Projects in ‘Internet Time’”. This training focuses on how to create a productive, satisfying work environment while managing a project from the initial requirements capture phase through to final testing and delivery. The training is divided into four major topic areas. The first area focuses on how to start a project right by kicking off planning the project, defining the mission of the project, and how to execute the initial requirements analysis phase.

The second area then focuses on an in depth requirements capture, development, and analysis methodology. This methodology also can prove completeness of the requirements. This is the most detailed part of the course.

The third section of the course then deals with how to manage a project using the software adaptive lifecycle development process. The waterfall development process has been the standard for several decades. This process works well when all of the requirements are known up front, and the requirements do not change. For most modern projects, the waterfall process does not work well because the users do not know all of the requirements up front, and may

actually change during the software development process. This is where the adaptive lifecycle development process shines. This methodology is iterative, and allows the development team to make “course corrections” to requirements and design during the development process; thereby producing a product that the customer wants and needs while staying within budget and schedule.

The last section of the course is entitled “Teamicide: How to Kill Otherwise Happy, Productive People and Projects.” This part of the course focuses on the results of a twenty-year study that showed that most IT projects fail due to politics, not technology. The study found that for each failure, there was always a technological solution; the failure was due to politics such as hidden agendas/motives, disenchantment with a customer, unclear requirements, etc. This part of the course focuses on how to avoid political problems with cause “teamicide” and to help projects be successful while also providing a fun, productive work environment for the team.

PHOTOGRAMETERY AND REMOTE SENSING

Not Applicable.

DATA COLLECTION

Timecard Tracking System
Genova designed and implemented an Oracle database for time card record keeping. This included designing and documenting the Entity Relationship Diagram, Data Dictionary, and DML script. Genova was also responsible for installing the Oracle 8 database server. Client tools utilized Visual Basic and Oracle Objects for OLE to access the database tables. This project involved migrating data and code from SQL Server to Oracle to MySQL.

Repair Tracking System
Genova designed and implemented an Oracle database for tracking repair data performed on aircraft systems. This included designing and documenting the Entity Relationship Diagram, Data Dictionary, and DML script. Client tools utilized Visual Basic and Oracle Objects for OLE to access the database tables.
Genova assisted The National Cancer Institute and the University of Iowa (from now on, referred to as just “NCI”) with the development of an application for their abstractors to gather cancer data. Abstractors go from hospital to hospital collecting data from cancer cases so that NCI can perform statistical analysis on the data. NCI had two major problems with their existing tool. First, it had several bugs that were slowing down the abstractors so that they were collecting less data. Secondly, NCI had a requirement to be able to gather quickly new information in accordance with the College of Surgeons guidelines. For example, if the College of Surgeons wants data collected on cancer patients who live within fifty miles of a nuclear plant, the tool needed to be quickly adaptable to gather this new information. NCI’s existing tool was not quickly adaptable, and the company owning the tool would take months to respond to new requirements.

National Cancer Institute
This project was on a tight schedule, since the budget for development was the budget allocated to buy the license for the existing tool for the following year. Therefore, if Genova did not finish the project on time, NCI would be in a bind, because the money to buy licenses for the existing tool would have been spent on development and NCI would be left with no abstracting tool. NCI hired Genova to gather, develop, and analyze the requirements of the tool, then to develop, test, and deploy the new tool. Genova met with the NCI staff and investigated the existing tool to document the initial requirements.

The abstractors needed to have a tool that would present to them different data fields to allow them to answer different questions as the College of Surgeon special studies dictated. To fulfill this requirement, Genova used a new technology (XML) in a new, unproven way. Genova identified this high-risk requirement early in the development process and began designing for it. The adaptive lifecycle development process methodology requires high-risk requirements to show an early proof-of-concept so that the risk can be mitigated early. This is what Genova did. Genova showed a successful proof-of-concept of this high-risk requirement during the first 4-6 week cycle that helped set the course for the rest of the project.

The NCI Abstracting tool was finished on-time, in-budget, with complete documentation showing the traceability of requirements from the initial requirements capture documents, through to the design documents, into the code, and finally into the test plan and procedures. The abstractors commented that they were able to complete 50% more abstracts with the new tool and that they were very satisfied.

Chicago Maps ActiveX Tools Document Management
This project demonstrates Genova's ability to deliver requirements engineering services, including requirements capture, development, analysis, and management. This project also demonstrates that Genova's requirements methodology is useful for not only projects to be developed, but also for the purchase of COTS (commercial-off-the-shelf) software.

The Defense Commissary Agency (DeCA) had funding to purchase a Records and Documents Management System. A DeCA resource assigned to gathering the requirements to produce the RFP was tasked with maintaining the existing, antiquated records and documents management system. Due to multiple problems in the existing system, the DeCA employee had fallen far behind schedule in developing the requirements for the new system. He was so far behind, that DeCA was faced with the prospect of losing their funding if the RFP and its responses could not be completed in a timely manner.

DeCA asked Genova to help them quickly develop solid requirements for their new records and documents management system. The Genova team worked with the DeCA staff and DeCA users to develop the requirements. This project was also "politically charged" because records and documents management crossed many domains, and each user domain had strong opinions on how the new system should work. The Genova team not only quickly developed the requirements, but also successfully navigated the political minefield, as stated by an email from the DERMAS Project Manager:

> *As discussed today on the phone, I cannot tell you how valuable Jim has been to the DERMAS effort. I do not know if anyone can save this ship, but Jim sure has been terrific since Day One, coming into a seemingly hopeless situation. His determination, skills, ethics, professionalism, manners (believe me, these came in terribly handy), and ability to stay on track and press forward (amongst the confusion and lack of direction), are just what the DERMAS doctor ordered. He has been positively instrumental in helping to connect a lot of the dots around this place, and he is to be commended…Although we are not through with him (!), I just wanted to take the time to thank you. It is a pleasure to work with Jim.*

GIS / ESRI Software / MapInfo

Not Applicable

Electronic Commerce / EDI

Genova has not had any direct EDI experience, but has researched it and worked with similar technologies.

Telecommunications Wide Area Network

Genova contracted to analyze and build a worldwide remote office network for Naval Exchange Services Command (NEXCOM). When Genova began working on the project in 1993, the 100+ NEXCOM facilities had no connectivity amongst themselves. This resulted in several homegrown applications developed at each location. Many of the applications performed the same functionality, but were running on different platforms, written in multiple languages and accessing disparate databases. It was Genova's task to unify and integrate these systems.

The system delivers office productivity applications, email, and network file and print services to 3000 users around the world using 60 Solaris servers and 1500 PC workstations. This project required very careful planning due to the business requirement that all system administration had to be done by personnel stationed at the corporate headquarters; there would be no technical support at each remote site. A difficult technical hurdle resulted from the client's requirement to use Sun's NIS+. This meant that two Sun Sparc servers were required at each site, according to Sun's recommendation to eliminate risk of system unavailability caused by WAN outages. Genova's network integration experts worked with Sun Consulting to develop custom PC client management software and modified authentication code to eliminate this two-server requirement. In addition, Genova created customized tools to allow the core group of administrators at the corporate headquarters to manage the entire network. Reducing the number of servers at a site from two to one and providing a centralized management system with greater controls operated by just 10 employees ***generated cost savings of $1 Million the first year alone***. These reductions were accomplished by integrating COTS and custom software. The Genova innovations are now included in the Sun releases.

BioMetrics

Genova has done extensive research in the field of Biometrics, but has not had the opportunity to apply it either internally or for a client.

Wireless Networking

Genova developed a world-class application as part of an onboard information network, providing an international transportation customer with a unique system that provides in-flight wireless access to information onboard a server on the aircraft as well as information available on the Internet. Using this technology, airline customers can surf the Internet or check their email while in flight.

Crewmembers can also use the system to support applications that eliminate many of the paper forms required upon arrival and before departure. Using the system's wireless LAN, these applications exchange data between the aircraft and the airline's network at the airport, enabling the airline to save both time and money.

The Wireless LAN Manager (WLM) provides management and health monitoring of the wireless LAN hardware within the unique environment of the aircraft. WLM ensures that the wireless LAN is disabled during critical phases of flight. When the wireless LAN is enabled, WLM ensures that it is operating at a frequency legal in the country where the aircraft is currently located.

WLM is a complex software development effort that requires frequent communication with others involved in the development of the total system, to define the many external interfaces WLM is required to support. WLM supports the following external interfaces:

- SNMP communication with the wireless hardware
- Proprietary communication with the wireless hardware
- Interfaces to two CORBA service processes
- Interface to a discrete I/O driver
- Interface for secure communications to an avionics data controller unit
- SNMP communication with SNMP manager applications
- Interface to an Oracle database
- Interface to XML files for configuration data

Because of the many external interfaces, the application design was required to be multi-threaded to prevent delays in communication over the interfaces. Genova implemented several design patterns within the application to meet performance requirements and provide flexibility as external interfaces changes over the life of the program.

Initial development began with the use of a third party library to handle the direct communication with the wireless hardware. After some early testing, it was determined that the third party library could not support all the requirements. Genova developed a replacement library that required a detailed understanding of how to configure and communicate with the wireless hardware. The new library met all requirements, ***delivered a 10-fold increase in performance,*** and is estimated to ***save the customer approximately $2 million*** over the life of the program.

WLM was initially targeted to run only on the Windows operating system. Recent efforts have required a port to run on Linux. Due to up-front design considerations at the beginning of the project, porting the existing application to Linux was accomplished in approximately 6 weeks.

During development of the WLM application, Genova engineers provided the following efforts:

- Software requirements definition and documentation
- Complete software design of the application and some of the external interfaces with required design documentation
- Software development and coding
- Unit testing of all code
- Software acceptance test plan and procedures documentation
- Support for system integration with actual hardware both locally and in Toulouse, France.
- Installation and configuration support documentation

WLM is currently in production and has been installed on commercial aircraft.

This project highlights many of Genova's abilities to design and develop a complex, yet robust, software application and provide support throughout the project to make it a success.

IT STAFFING

Genova has a recruiting department that supplements the IT staffing needs of our customers locally and nationwide. Genova understands that hiring managers are already overwhelmed with other responsibilities and commitments and we are deeply committed to saving them time

by submitting only highly qualified candidates. Our rigorous screening process has resulted in over 80% of candidates presented being made an offer.

Generally, one of the drawbacks of using supplemental staff to perform on projects is that when their assignment is over and they move on to their next assignment, the project knowledge goes with them. Genova mitigates this issue in two ways. First, whenever possible, Genova assigns a full-time permanent Genova employee to work with the supplemental staff so that Genova retains the knowledge base. Genova has an extremely high employee retention rate. Customers have contacted us years after the completion of a project and were able to speak to original project team members. The second way Genova helps prevent knowledge loss is by scheduling a meeting with the departing contractor(s) for a project review prior to their departure. This extra effort helps our clients long after the project concludes.

Graphic / Web Design

Genova has developed several cutting edge web applications that include various functions including data gathering, reporting, and analysis over the web. In order to provide full support to our customers, security services include Internet Firewalls, Secure Web Servers, and Intranet and Extranet site development and clearly defined portal development applications that restrict access and privileges.

Other

Continuing Education System
Genova, in partnership with the University of Iowa, won a SBIR (Small Business Innovation Research) grant to develop a tool to address the problem of medical errors due to the omission of using guidelines.

Genova provided the technical abilities in database design, database administration, data load balancing, web server technology expertise, intuitive Graphic User Interface design, current off-the-shelf technologies, and networking expertise. The University of Iowa provided clinical medical consulting expertise and guidance during the design phase and crucial field-testing of the now patented WebCE tool.

WebCE allows the physician to gain access to new medical information and standardized medical practices while receiving CME credits during his/her clinic day. The Physician gains this information (and CME credit) in granules as small as one-two minutes. Physicians can even obtain more credits on a subject by requesting links to be sent to them at the end of the clinic day.

The Genova team worked with groups of physicians to determine their requirements, and then designed and built WebCE. Genova also worked with the AMA to insure that the new system would meet AMA CME guidelines.

Invitation to Qualify

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Contact
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Dir. Business Development
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ann.fleckenstein@genovatech.com

Woman-Owned Small Business

DUNS
92-985-2820

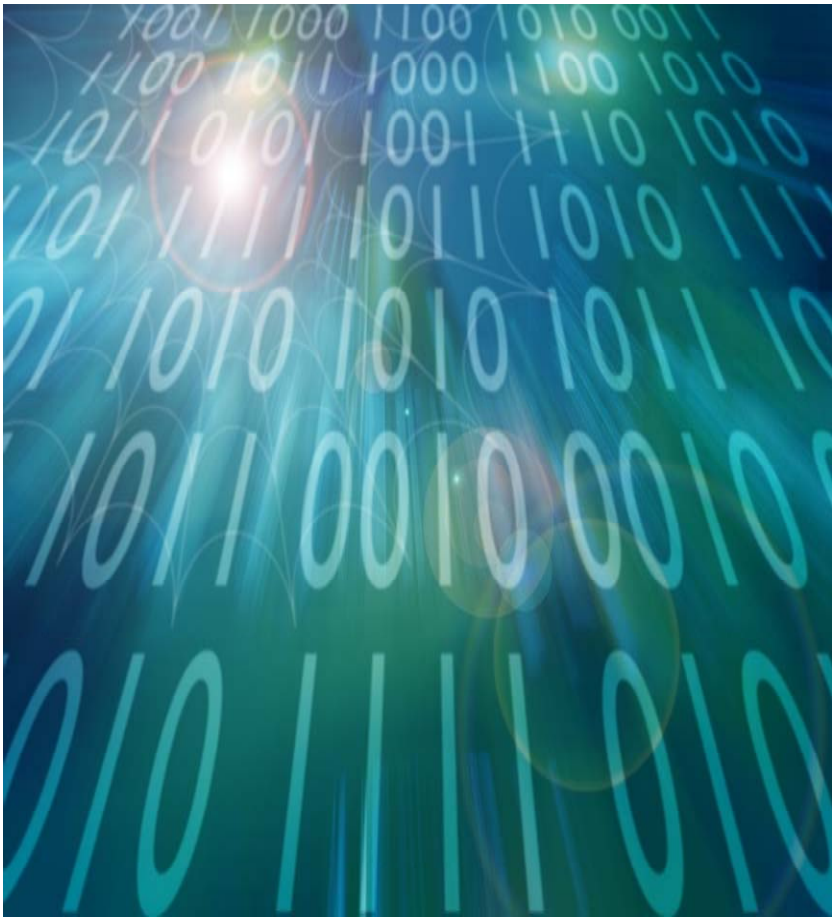
CMS BPA
HHSM-500-2005-00001B

GSA Schedule 70
GSA GS-35F-0303M

NAICS Codes
518210, 541511, 541512, 541519, 54171, 541330, 541611, 611420, 611430

RFP BD80200S102

Implementation



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1. PROVIDING RESOURCES

How do you intend to provide the resources required by this ITQ?
Genova has a Resource Planning Team that is responsible for coordinating all resources for current and future projects. The committee meets at least once a week to discuss the progress on existing jobs as well as any potential projects for the future. The Committee utilizes Microsoft Project to organize and track the company's various projects and resources. With this process, Genova has the ability to plan for all projects and resource needs well in advance. This ensures that the company is able to meet all personnel requirements in a timely manner.

2. CONTRACT ADMINISTRATOR

Identify the SP contract administrator and describe the functions that person will perform.
Ann Fleckenstein will act as the contract administrator. Her contact information is as follows: Genova Technologies, 5250 North River Blvd NE, Cedar Rapids, Iowa 52411; (319) 378-8455; ann.fleckenstein@genovatech.com

The contract administrator (CA) will be responsible for the overall performance of the contract in accordance with contractual requirements as well as Genova company policies. The CA will have full responsibility and authority in all areas necessary for the accomplishment of the mission and will be the primary point of contact for business negotiations.

The CA will transition each project over to a Project Manager (PM) who will become the primary point of contact for the technical aspects of the project. The PM will direct staff in areas of cost, schedule, technical performance, impact analysis, software quality assurance, management, project controls, and project administration. Inherent responsibilities include providing and submitting all plans, records, reports, and data to the customer in accordance with Genova policies and contractual requirements. The CA and PM will maintain liaison with State officials regarding the operational and contractual aspects of the project.

3. PROVIDING ADDITIONAL PERSONNEL

Describe how you plan on providing additional personnel if it becomes necessary to properly staff projects.
As discussed in question 1, Genova has a Resource Planning Team that meets regularly coordinate current and future resource needs.

In addition, Genova has an internal Recruiting Department that works closely with Genova's Resource Planning Team to anticipate vacancies and surge requirements in sufficient time to identify replacement or supplemental candidates.

Another approach Genova uses is to partner with organizations and companies that can provide extensive experience or additional personnel that would be a "fit" for the project. While these companies may compete with Genova in some areas, there can be significant benefits to working together as a team. We refer to this relationship as "co-peting". By forming these partnerships, Genova provides our customers with the best possible team to perform the work.

4. ABILITY TO ADDRESS ISSUES

Describe your company's ability to uniquely address problems and issues related to the service category.

Genova's premier differentiator is the ability to quickly and thoroughly document all system and project requirements with its proprietary technique. Genova is able to track each requirement from analysis, to design, development, testing, and documentation. As new requirements or risks are uncovered, their impact to the schedule and/or budget is discussed with the customer. An adaptive lifecycle approach enables Genova to make the necessary adjustments throughout development, resulting in a final project that exactly suits the customer's needs and adheres to both schedule and cost.

As a small business, Genova takes a personal interest in the success of its customers' projects that often larger organizations can not replicate. Genova's references show that Genova consistently provides a high level of responsiveness, reliability, and flexibility. Genova utilizes project management techniques and methodologies adapted from industry standards and best-practices such as the Project Management Institute' *Body of Knowledge*.

Genova is committed to maintaining effective, consistent communication with the customer throughout all stages of the project. Genova uses a variety of methods to keeping the client involved. Genova submits status reports at regular intervals. Frequent meetings are scheduled to review progress, plan strategies, or mitigate risks. In addition, there are phone calls, emails, and secure access to project information online. Genova has a virtual private network (VPN) solution in place to provide the project team access to project information from the office, home, or while traveling. Genova is also implementing an Enterprise Project Management solution that will allow customers to view project information online 24 hours a day.

IMPLEMENTATION

Whenever possible, Genova implements new systems during the least critical business cycles. Any initializations need to be prepared and performed. Any training and user manuals need to be provided prior to system rollout.

It is best to plan a pilot rollout to minimize exposure especially if the users themselves need more time to get accustomed to the change. Any problems that may occur due to the new setting of the environment will be addressed as soon as possible to minimize any down time of the system. However, all production procedures for changes will be followed for audit trails, version controls, and fallbacks.

Genova's practice is to give ample time for all parties to review their roles and responsibilities including any dependencies to achieve a smooth implementation. A detailed implementation plan is provided and discussed. Times and schedules, on-site coverage, job procedures and contingency plans are made available.

Review/Post Implementation/Maintenance

The team will conduct a review of all logged issues and all changes applied to ensure that all open items were closed. The team will also review how the system is behaving in production at this stage.

If open issues remain, they are discussed to identify the resolution. The procedure for applying changes to fix any problems that occur in production is followed. Handoff procedures are also put into place to ensure that the clients have everything that they need to support their system if this is the case.

5. ADOPTING CLIENT POLICIES

Describe your company's practices in adopting client policies and methods.
When beginning a project, Genova requests a copy of the customer's relevant coding standards and any document templates that will be utilized. When the Project Manager sees a value departing from the standard, the issue is discussed with the client. The Project Manager is also responsible for ensuring that the client's quality control and security standards are followed.

Genova has developed a Quality Assurance Manual that includes coding standards, project management methodologies, and other quality procedures. Genova will employ its own policies whenever clients do not have their own in place. If the two policies are in conflict, Genova will defer to the client's policies, unless a real value is gained by veering away from the policy. In this situation, Genova would discuss the advantages of altering the policy with the client and allow the client to make an informed decision regarding which policy to adhere to.

6. OPERATING & COMMUNICATION SYSTEM EXPERIENCE

List each type / brand of operating system/ communication system you are experienced with in each category below and make comments.

System	Experience	Independent Performance	Ability to Teach
Mainframe	Limited	Yes	No
Midrange / Minicomputer	Sun Solaris – Decades of combined experience. Ulta 1, 250, 450 class	Yes	Yes
Client / Server / Distributed Systems	Windows, Unix, Linux, NT	Yes	Yes
Desktop	Windows 9x/NT/2000, Linux, Solaris, ME	Yes	Yes
LAN	Solaris, Microsoft, Novell, NT, 2000, Linux Naming services – DNS, NIS, NIS+, NDS and small amount of LDAP.	Yes	Yes
Languages and DBMS	C++, Visual C++, Borland C++ Builder, C, C#, Java, Ada, ASP.Net, ASP, VB, HTML, XML, Cold Fusion, Crystal Reports, CORBA, COM/DCOM, Portal/Internet Development,	Yes	Yes
Model Based Development	MATLAB/Simulink	Yes	Yes

7. DATABASE EXPERIENCE

Describe your products / experience with Databases.

Product	Experience	Independent Performance	Ability to Teach
Administration	Oracle Certified, SQL Server Certified, Microsoft Access, and ODBC client connections	Yes	Yes
Application Development Tools	Used many languages to create client and web applications tied to databases, SQLAPI with C++ and native Oracle	Yes	Yes
End User Tools	WebCE, Timecard,	Yes	Yes
Structure & Methodologies	UML, N-Tier, EA,	Yes	
Other	SQL statements; ODBC, JDBC.	Yes	Yes

Additional Information

Our company has over 10 years of experience with database design and development with various databases including Microsoft Access, Oracle, Microsoft SQL Server, Progress, DB2, and IDMS.

Our Database administrators are certified in Oracle and Microsoft SQL server 7.0 and 2000. The figure below shows some of the database expertise and services available from Genova.

Database Administration

These types of services would likely be needed by companies that have don't have a full time DBA on staff.

1) **Database set up**
   a) Check for adequate redundancy of control files and redo logs
   b) Proper sizing of roll-back segments and data files
   c) Check for file contention
   d) File striping
2) **Back up**
   a) Review backup/ recovery strategy
   b) OS Scripts for shut-down/backup/startup
   c) Archive redo logs
3) **File Reorganization**
   a) Tables
   b) Indexes
4) **Users**
   a) Password maintenance
   b) Privilege/Role/Profile maintenance
5) **Alert Files**
   a) Check/clean up Alert and Trace files

Database Tuning

These types of services are much more time intensive. Hence, even when a DBA is on staff, they may not have the opportunity to work through the testing required. They are listed in order of diminishing return.

1) **Operating System**
   a) CPU Usage
   b) Memory Usage
2) **System Global Area**
   a) Check sizing of SGA, Shared Pool, Data Dictionary Cache and Library Cache
   b) Tune Buffer cache
   c) Tune Redo Log buffer
3) **I/O**
   a) Tune Checkpoints
   b) Tune background processes
   c) Reallocate/ Reorganize table-spaces
   d) Tune Sort area and Temporary table-space
   e) Tune Rollback segments
4) **Locks and Latches**
   a) Check for contention

Application Tuning

These types of services are much more time intensive. Hence, even when a DBA is on staff, they may not have the opportunity to work through the testing required. This could be done before an application went into production or, assuming the source was available, could be part of an ongoing tuning process. The most effective tuning is done here.

1) **SQL Statements**
   a) Test and recommend changes to application SQL statements
   b) Write packages that may could replace code based SQL calls
   c) Pin packages in memory.
2) **Indexes**
   a) Select most efficient index for application

All of these services assume a single server implementation. Partitioned and possibly multithreaded servers may require special consideration.

ORACLE | PARTNER PROGRAM

8. SOFTWARE EXPERIENCE

What general software applications have you experience in?
Genova's staff averages 15 years industry experience. Genova has created custom software solutions for clients in banking, medical, transportation, communication, and government industries. Genova's unique approach has saved customers millions of dollars.

Application Development
Application development includes multi-tiered, client/server, and web services applications across diverse environments including Windows, Linux, Unix, and embedded operating systems. Genova has extensive experience in leading databases and programming languages. To better server our clients, Genova is committed to staying current with emerging trends and technologies.

Network Design and Remote Management
Genova has developed several WAN and LAN implementations. Networking connections included traditional LAN and WAN protocols as well as wireless and satellite transmissions. Genova also provides remote management over a virtual private network (VPN). This has proven to be the most cost effective solution for our clients that need technical assistance for undetermined times, upon their request.

System Integration
Genova designed, developed, and implemented a worldwide system integration effort that involved a multi-vendor legacy platform environment. This was a global application and installation that included customization of Commercial Off the Shelf (COTS) software. After the successful deployment of the application, Genova has been retained on a consulting services basis to provide support as needed for over eight years.

Web-Based Application Development
Genova has developed several cutting edge web applications that include various functions including data gathering, reporting, and analysis over the web. In order to provide full support to our customers, security services includes Internet Firewalls, Secure Web Servers, Intranet and Extranet site development and clearly defined portal development applications that restrict access and privileges.

9. OTHER EXPERIENCE

Please describe any experience and deployed solutions in each of the following specific technologies below.

Item	Experience	Independent Performance	Ability to Teach
a) Help desk solutions / technologies	See detailed experience below	Yes	Yes
b) Data development	See detailed experience below	Yes	Yes
c) Data modeling	See detailed experience below	Yes	
d) Facilitating and consulting	See detailed experience below	Yes	Yes
e) Photogrametery and remote sensing	See detailed experience below	NA	NA
f) Data collection and clean up mapping	See detailed experience below	Yes	Yes
g) GIS / ESRI Software / Mapinfo	NA	NA	NA
h) Electronic Commerce / EDI	NA	NA	NA
i) Document management	NA	NA	NA
j) Telecommunications wide area network	See detailed experience below	Yes	Yes
k) Biometrics	NA	NA	NA
l) Wireless networking	See detailed experience below	Yes	Yes
m) IT staffing	See detailed experience below	Yes	Yes
n) Graphic / web design	See detailed experience below	Yes	Yes
o) Other	See detailed experience below	Yes	Yes

HELP DESK SOLUTIONS / TECHNOLOGIES

Genova assisted a group within the Department of Defense (DoD) with policies and plans for deploying their IT help desk. This group had distributed, regional help desks, but had been mandated to consolidate and form a centralized help desk at headquarters. This problem required new IT policies and plans. Next, Genova examined help desk industry standards, and the tools and infrastructure available to DoD to solve this problem. One of the leading industry standards for managing a help desk is called ITIL – IT Infrastructure Library. It covers much more than help desk, but is a good basis for developing many infrastructure standards. DoD's help desk system was Remedy™, which is based on ITIL standards. Since the help desk system was in alignment with a proven industry standard, Genova began aligning policies and plans to meet standards. Genova also needed to modify the standards to fit the DoD and its user community. Finally, DoD did not have funding to purchase all of the functionality available in Remedy; therefore, Genova assisted with modification of their policies and plans to fit that subset of functionality. Genova also wrote software to communicate between disparate help desk technologies across the Internet.

DATA DEVELOPMENT

This project highlights Genova's ability to work closely with technology partners in all phases of a project from concept to full integration and testing.

The Advantaged Node Technology (ANT) project is a component of the Multifunctional On the Move Secure Adaptive Integrated Communication (MOSAIC) Advanced Technology Demonstration (ATD) program. The goal of the MOSAIC program was to develop and demonstrate a suite of protocols for providing end-to-end communication services across mobile ad-hoc military networks with assured throughput, latency, and dependable delivery. In particular, this advantaged node technology utilized the enhanced visibility of elevated nodes (or nodes connected to other networks) in a manner that increases the overall capabilities of the network.

Key concepts of the Advantaged Node Technology are:

- Avoiding congestion in nodes that have significantly better connectivity to the members of a target sub network, than does the average node -- for example airborne nodes. Congestion may typically happen in such nodes, because all shortest path routes would tend to flow through this highly connected node. The Advantaged Node Protocols attempt to alleviate this congestion by discovering and manipulating the connectivity at layer 2 in order to create a network topology at layer 3 that only routes certain classes of service through the advantaged nodes.
- Avoiding routing instabilities in nodes with an advantaged position but have dynamic or intermittent connectivity, for example a low moving helicopter. This type of node is considered a disadvantaged node.
- And, taking advantage of nodes with links to additional sub networks, which may offer, for example, long-range one-hop, communications to a similar node in a distant part of the original sub network.

The work on this program started with using the ANT concept and defining the requirements for the software. Work progressed through the software design, modeling, and development. After successful testing and demonstration in the lab environment, the software was ported to a military communications radio. The radios were placed in vehicles in a field test environment

and the technology was successfully demonstrated to potential end users. This technology is intended to play a key role in the communications infrastructure of advanced military radios of the future.

During the program, Genova engineers provided the following services:

- Assist with requirements definition
- Design of the communications software and routing protocol implementation
- Development and coding of the communications software
- Support for execution of the developed code in modeling software packages
- Design the interfaces to allow the software to be installed and configured on the target radios
- Testing within the development lab
- Work with radio hardware engineers to install and configure the software on target radios
- Support for both lab and field demonstrations.

Genova engineers worked closely with Rockwell Collins engineers throughout this project to support the development and, in particular, the integration of the new communications software onto the target radios.

DATA MODELING

Genova has certified database administrators on staff. We have Oracle Certified and Microsoft Certified Application professionals on staff. Collectively, they have over 40 year's industry experience. Following are highlights of projects they have worked on while at Genova:

Iowa DNR
This tool tracks the effluent and influent flow of chemicals deposited into water areas. The program is designed to generate permits for facilities that are requesting to dump pollutants into the water and then tracks the mandatory reports submitted by companies to ensure compliance with environmental regulations.

- Modeled a pollution discharge measurement system in SQL Server that included an XML export to the EPA database.
- Data modeling to convert an IDMS mainframe database to Microsoft SQL Server
- Data modeling to make necessary change to the Microsoft SQL Sever database to Configure it for One Stop Initiative

Siemens
Genova enhanced an existing application to dispatch and track Freeway Service Patrol and Traffic Management Teams. The Freeway Service Patrol consists of tow trucks that are contracted during rush hour traffic to provide assistance to motorists. This assistance can come in the form of a gallon of gas, towing of the vehicle, to transporting of occupants of the vehicle to ensure traffic congestion is minimized. Traffic Management Team vehicles also aid motorists by raising a sign on their trucks to inform motorists that they are approaching a potential traffic incident. These incidents can range from lane closures to detours.

The existing application was used for one-way assignment of incidents from the dispatcher to the vehicles for Police, Fire, and Ambulance. The new development consists of new incident types and the ability of a vehicle operator that discovers an incident to assign himself to that incident while keeping Supervisor vehicles and Dispatch informed of the incidents, their progress, and locations. The vehicles are tracked on an on-screen map and the incident status

is tracked and updated on a separate screen as they respond, arrive at the scene, or complete the incident.

Some of the tasks Genova assisted with are:

- Remapped the data model for a SQL Server database to Oracle converting all entities including tables, views, stored procedures
- Created SQL Server data model for traffic assistance package that modeled support vehicle locations, accidents, and traffic flow incidents.
- Designed to Siemens' database design standards.

Rockwell

Genova developed a common tool to compile assumptions for marketing and sales of aircraft for their Commercial Systems. This new tool was to take six long-term sales and forecast processes and methods across six different business units and consolidate them into one process to support the forecast and variety of requests from managers.

Specific tasks performed by Genova included:

- Provide a common tool to compile Rockwell's assumptions for Market & Sales forecasting for aircraft across six divisions.
- Perform analysis between using SQL Server vs. Microsoft Access
- Allows analysis across the Commercial Service Business
- To Convert 6 Microsoft Excel spreadsheets from six divisions into one process using Microsoft Access.
- Allow import of information from other database's and Microsoft Excel spread sheets
- Allow Data entry of information
- Create reports in Microsoft Excel
  - *Allowed the users to do "what if" scenarios without changing the forecast data.*
  - *Allowed the user to do ad hoc reporting from the information dumped to Microsoft Excel.*

Union Pacific Railroad

Genova created this database driven application allowing locomotives to wirelessly report their location and locomotive health. The application's responsibility was to capture this data, store it in the database, and display to dispatchers any potential mechanical problems that the locomotive was reporting. The goal of the system was to be able to know about mechanical problems before the locomotive came into the depot, so that the necessary parts could be waiting.

The Genova team designed and implemented the Oracle database for storing health information on the various systems installed on a locomotive. This included designing and documenting the Entity Relationship Diagram, Data Dictionary, and DML script. Genova was also responsible for installing the Oracle 7 database server for client. Client tools utilized Visual Basic and ODBC to access the database tables. The database was critical to the success of the project, because much of the data had several inter-dependencies and unknowns. Union Pacific was so impressed with the database design and implementation, that they copied it for some of their other systems (i.e. railroad cars), to do similar applications.

General

Learning and Training Strategic Consulting

Our experienced teams are dedicated to assisting you in analyzing and clarifying business objectives, resulting in successful custom solutions. Every custom solution begins with defining and understanding the audience, available instructional technology (LMS/LCMS), standards (SCORM and 508 compliance) company culture, initiatives, and desired results.

Training Content Development Conversion
Transforming a storyboard, script, or manual into e-learning modules involves more than a simple cut-and-paste process. Off-the-shelf e-learning authoring tools can provide limited interaction and customization. With our custom development solution, a team of developers transforms your content from static text into engaging learning objects, enhancing knowledge transfer resulting in greater retention. We have SCORM and 508 compliancy expertise. *We can convert:*

- PPT, Word or Excel to a web-based module or modules (deployed on our LMS or yours)
- Authorware modules to a web-based module or modules
- Toolbook to a web-based module or modules (deployed on our LMS or yours)
- Video presentations (VHS) to a web-based module or modules (deployed on our LMS or yours)

Training Content Conversion
With our content conversion and development solution, a team of developers can transform your manuals or existing classroom-based training materials. We can supplement your training materials by converting only those pieces/modules that are able to be delivered over Internet.

Our solution is custom and we focus on making sound instructional decisions when converting existing training materials. For example, we do not suggest converting ALL of your classroom-based training materials simply for the sake of putting training on the Internet. We have SCORM and 508 compliancy expertise. *We can convert:*

- Once we analyze your content, audience and delivery goals,
- Testing or quizzes for delivery on the Internet (with custom reporting)
- PPT, Word or Excel to compliment your classroom-based materials
- Video presentations (VHS) to a web-based delivery mode

FACILITATING AND CONSULTING

Genova teaches a requirements analysis and adaptive software development training course, entitled “Managing Projects in ‘Internet Time’”. This training focuses on how to create a productive, satisfying work environment while managing a project from the initial requirements capture phase through to final testing and delivery. The training is divided into four major topic areas. The first area focuses on how to start a project right by kicking off planning the project, defining the mission of the project, and how to execute the initial requirements analysis phase.

The second area then focuses on an in depth requirements capture, development, and analysis methodology. This methodology also can prove completeness of the requirements. This is the most detailed part of the course.

The third section of the course then deals with how to manage a project using the software adaptive lifecycle development process. The waterfall development process has been the standard for several decades. This process works well when all of the requirements are known up front, and the requirements do not change. For most modern projects, the waterfall process does not work well because the users do not know all of the requirements up front, and may

actually change during the software development process. This is where the adaptive lifecycle development process shines. This methodology is iterative, and allows the development team to make “course corrections” to requirements and design during the development process; thereby producing a product that the customer wants and needs while staying within budget and schedule.

The last section of the course is entitled “Teamicide: How to Kill Otherwise Happy, Productive People and Projects.” This part of the course focuses on the results of a twenty-year study that showed that most IT projects fail due to politics, not technology. The study found that for each failure, there was always a technological solution; the failure was due to politics such as hidden agendas/motives, disenchantment with a customer, unclear requirements, etc. This part of the course focuses on how to avoid political problems with cause “teamicide” and to help projects be successful while also providing a fun, productive work environment for the team.

PHOTOGRAMETERY AND REMOTE SENSING

Not Applicable.

DATA COLLECTION

Timecard Tracking System
Genova designed and implemented an Oracle database for time card record keeping. This included designing and documenting the Entity Relationship Diagram, Data Dictionary, and DML script. Genova was also responsible for installing the Oracle 8 database server. Client tools utilized Visual Basic and Oracle Objects for OLE to access the database tables. This project involved migrating data and code from SQL Server to Oracle to MySQL.

Repair Tracking System
Genova designed and implemented an Oracle database for tracking repair data performed on aircraft systems. This included designing and documenting the Entity Relationship Diagram, Data Dictionary, and DML script. Client tools utilized Visual Basic and Oracle Objects for OLE to access the database tables.
Genova assisted The National Cancer Institute and the University of Iowa (from now on, referred to as just “NCI”) with the development of an application for their abstractors to gather cancer data. Abstractors go from hospital to hospital collecting data from cancer cases so that NCI can perform statistical analysis on the data. NCI had two major problems with their existing tool. First, it had several bugs that were slowing down the abstractors so that they were collecting less data. Secondly, NCI had a requirement to be able to gather quickly new information in accordance with the College of Surgeons guidelines. For example, if the College of Surgeons wants data collected on cancer patients who live within fifty miles of a nuclear plant, the tool needed to be quickly adaptable to gather this new information. NCI’s existing tool was not quickly adaptable, and the company owning the tool would take months to respond to new requirements.

National Cancer Institute
This project was on a tight schedule, since the budget for development was the budget allocated to buy the license for the existing tool for the following year. Therefore, if Genova did not finish the project on time, NCI would be in a bind, because the money to buy licenses for the existing tool would have been spent on development and NCI would be left with no abstracting tool. NCI hired Genova to gather, develop, and analyze the requirements of the tool, then to develop, test, and deploy the new tool. Genova met with the NCI staff and investigated the existing tool to document the initial requirements.

The abstractors needed to have a tool that would present to them different data fields to allow them to answer different questions as the College of Surgeon special studies dictated. To fulfill this requirement, Genova used a new technology (XML) in a new, unproven way. Genova identified this high-risk requirement early in the development process and began designing for it. The adaptive lifecycle development process methodology requires high-risk requirements to show an early proof-of-concept so that the risk can be mitigated early. This is what Genova did. Genova showed a successful proof-of-concept of this high-risk requirement during the first 4-6 week cycle that helped set the course for the rest of the project.

The NCI Abstracting tool was finished on-time, in-budget, with complete documentation showing the traceability of requirements from the initial requirements capture documents, through to the design documents, into the code, and finally into the test plan and procedures. The abstractors commented that they were able to complete 50% more abstracts with the new tool and that they were very satisfied.

Chicago Maps ActiveX Tools Document Management
This project demonstrates Genova's ability to deliver requirements engineering services, including requirements capture, development, analysis, and management. This project also demonstrates that Genova's requirements methodology is useful for not only projects to be developed, but also for the purchase of COTS (commercial-off-the-shelf) software.

The Defense Commissary Agency (DeCA) had funding to purchase a Records and Documents Management System. A DeCA resource assigned to gathering the requirements to produce the RFP was tasked with maintaining the existing, antiquated records and documents management system. Due to multiple problems in the existing system, the DeCA employee had fallen far behind schedule in developing the requirements for the new system. He was so far behind, that DeCA was faced with the prospect of losing their funding if the RFP and its responses could not be completed in a timely manner.

DeCA asked Genova to help them quickly develop solid requirements for their new records and documents management system. The Genova team worked with the DeCA staff and DeCA users to develop the requirements. This project was also "politically charged" because records and documents management crossed many domains, and each user domain had strong opinions on how the new system should work. The Genova team not only quickly developed the requirements, but also successfully navigated the political minefield, as stated by an email from the DERMAS Project Manager:

> *As discussed today on the phone, I cannot tell you how valuable Jim has been to the DERMAS effort. I do not know if anyone can save this ship, but Jim sure has been terrific since Day One, coming into a seemingly hopeless situation. His determination, skills, ethics, professionalism, manners (believe me, these came in terribly handy), and ability to stay on track and press forward (amongst the confusion and lack of direction), are just what the DERMAS doctor ordered. He has been positively instrumental in helping to connect a lot of the dots around this place, and he is to be commended…Although we are not through with him (!), I just wanted to take the time to thank you. It is a pleasure to work with Jim.*

GIS / ESRI Software / MapInfo

Not Applicable

Electronic Commerce / EDI

Genova has not had any direct EDI experience, but has researched it and worked with similar technologies.

Telecommunications Wide Area Network

Genova contracted to analyze and build a worldwide remote office network for Naval Exchange Services Command (NEXCOM). When Genova began working on the project in 1993, the 100+ NEXCOM facilities had no connectivity amongst themselves. This resulted in several homegrown applications developed at each location. Many of the applications performed the same functionality, but were running on different platforms, written in multiple languages and accessing disparate databases. It was Genova's task to unify and integrate these systems.

The system delivers office productivity applications, email, and network file and print services to 3000 users around the world using 60 Solaris servers and 1500 PC workstations. This project required very careful planning due to the business requirement that all system administration had to be done by personnel stationed at the corporate headquarters; there would be no technical support at each remote site. A difficult technical hurdle resulted from the client's requirement to use Sun's NIS+. This meant that two Sun Sparc servers were required at each site, according to Sun's recommendation to eliminate risk of system unavailability caused by WAN outages. Genova's network integration experts worked with Sun Consulting to develop custom PC client management software and modified authentication code to eliminate this two-server requirement. In addition, Genova created customized tools to allow the core group of administrators at the corporate headquarters to manage the entire network. Reducing the number of servers at a site from two to one and providing a centralized management system with greater controls operated by just 10 employees ***generated cost savings of $1 Million the first year alone***. These reductions were accomplished by integrating COTS and custom software. The Genova innovations are now included in the Sun releases.

BioMetrics

Genova has done extensive research in the field of Biometrics, but has not had the opportunity to apply it either internally or for a client.

Wireless Networking

Genova developed a world-class application as part of an onboard information network, providing an international transportation customer with a unique system that provides in-flight wireless access to information onboard a server on the aircraft as well as information available on the Internet. Using this technology, airline customers can surf the Internet or check their email while in flight.

Crewmembers can also use the system to support applications that eliminate many of the paper forms required upon arrival and before departure. Using the system's wireless LAN, these applications exchange data between the aircraft and the airline's network at the airport, enabling the airline to save both time and money.

The Wireless LAN Manager (WLM) provides management and health monitoring of the wireless LAN hardware within the unique environment of the aircraft. WLM ensures that the wireless LAN is disabled during critical phases of flight. When the wireless LAN is enabled, WLM ensures that it is operating at a frequency legal in the country where the aircraft is currently located.

WLM is a complex software development effort that requires frequent communication with others involved in the development of the total system, to define the many external interfaces WLM is required to support. WLM supports the following external interfaces:

- SNMP communication with the wireless hardware
- Proprietary communication with the wireless hardware
- Interfaces to two CORBA service processes
- Interface to a discrete I/O driver
- Interface for secure communications to an avionics data controller unit
- SNMP communication with SNMP manager applications
- Interface to an Oracle database
- Interface to XML files for configuration data

Because of the many external interfaces, the application design was required to be multi-threaded to prevent delays in communication over the interfaces. Genova implemented several design patterns within the application to meet performance requirements and provide flexibility as external interfaces changes over the life of the program.

Initial development began with the use of a third party library to handle the direct communication with the wireless hardware. After some early testing, it was determined that the third party library could not support all the requirements. Genova developed a replacement library that required a detailed understanding of how to configure and communicate with the wireless hardware. The new library met all requirements, ***delivered a 10-fold increase in performance,*** and is estimated to ***save the customer approximately $2 million*** over the life of the program.

WLM was initially targeted to run only on the Windows operating system. Recent efforts have required a port to run on Linux. Due to up-front design considerations at the beginning of the project, porting the existing application to Linux was accomplished in approximately 6 weeks.

During development of the WLM application, Genova engineers provided the following efforts:

- Software requirements definition and documentation
- Complete software design of the application and some of the external interfaces with required design documentation
- Software development and coding
- Unit testing of all code
- Software acceptance test plan and procedures documentation
- Support for system integration with actual hardware both locally and in Toulouse, France.
- Installation and configuration support documentation

WLM is currently in production and has been installed on commercial aircraft.

This project highlights many of Genova's abilities to design and develop a complex, yet robust, software application and provide support throughout the project to make it a success.

IT STAFFING

Genova has a recruiting department that supplements the IT staffing needs of our customers locally and nationwide. Genova understands that hiring managers are already overwhelmed with other responsibilities and commitments and we are deeply committed to saving them time

by submitting only highly qualified candidates. Our rigorous screening process has resulted in over 80% of candidates presented being made an offer.

Generally, one of the drawbacks of using supplemental staff to perform on projects is that when their assignment is over and they move on to their next assignment, the project knowledge goes with them. Genova mitigates this issue in two ways. First, whenever possible, Genova assigns a full-time permanent Genova employee to work with the supplemental staff so that Genova retains the knowledge base. Genova has an extremely high employee retention rate. Customers have contacted us years after the completion of a project and were able to speak to original project team members. The second way Genova helps prevent knowledge loss is by scheduling a meeting with the departing contractor(s) for a project review prior to their departure. This extra effort helps our clients long after the project concludes.

Graphic / Web Design

Genova has developed several cutting edge web applications that include various functions including data gathering, reporting, and analysis over the web. In order to provide full support to our customers, security services include Internet Firewalls, Secure Web Servers, and Intranet and Extranet site development and clearly defined portal development applications that restrict access and privileges.

Other

Continuing Education System
Genova, in partnership with the University of Iowa, won a SBIR (Small Business Innovation Research) grant to develop a tool to address the problem of medical errors due to the omission of using guidelines.

Genova provided the technical abilities in database design, database administration, data load balancing, web server technology expertise, intuitive Graphic User Interface design, current off-the-shelf technologies, and networking expertise. The University of Iowa provided clinical medical consulting expertise and guidance during the design phase and crucial field-testing of the now patented WebCE tool.

WebCE allows the physician to gain access to new medical information and standardized medical practices while receiving CME credits during his/her clinic day. The Physician gains this information (and CME credit) in granules as small as one-two minutes. Physicians can even obtain more credits on a subject by requesting links to be sent to them at the end of the clinic day.

The Genova team worked with groups of physicians to determine their requirements, and then designed and built WebCE. Genova also worked with the AMA to insure that the new system would meet AMA CME guidelines.

Invitation to Qualify

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Contact
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Dir. Business Development
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ann.fleckenstein@genovatech.com

Woman-Owned Small Business

DUNS
92-985-2820

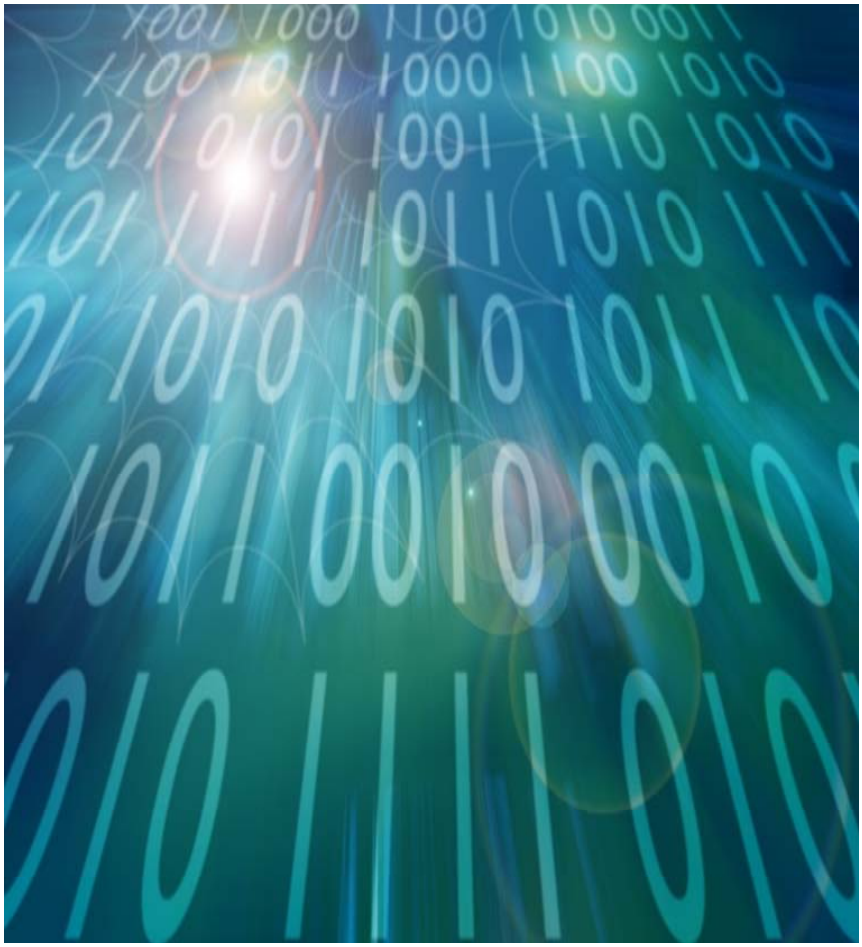
CMS BPA
HHSM-500-2005-00001B

GSA Schedule 70
GSA GS-35F-0303M

NAICS Codes
518210, 541511, 541512, 541519, 54171, 541330, 541611, 611420, 611430

RFP BD80200S102

Testing



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1. PROVIDING RESOURCES

How do you intend to provide the resources required by this ITQ?
Genova has a Resource Planning Team that is responsible for coordinating all resources for current and future projects. The committee meets at least once a week to discuss the progress on existing jobs as well as any potential projects for the future. The Committee utilizes Microsoft Project to organize and track the company's various projects and resources. With this process, Genova has the ability to plan for all projects and resource needs well in advance. This ensures that the company is able to meet all personnel requirements in a timely manner.

2. CONTRACT ADMINISTRATOR

Identify the SP contract administrator and describe the functions that person will perform.
Ann Fleckenstein will act as the contract administrator. Her contact information is as follows: Genova Technologies, 5250 North River Blvd NE, Cedar Rapids, Iowa 52411; (319) 378-8455; ann.fleckenstein@genovatech.com

The contract administrator (CA) will be responsible for the overall performance of the contract in accordance with contractual requirements as well as Genova company policies. The CA will have full responsibility and authority in all areas necessary for the accomplishment of the mission and will be the primary point of contact for business negotiations.

The CA will transition each project over to a Project Manager (PM) who will become the primary point of contact for the technical aspects of the project. The PM will direct staff in areas of cost, schedule, technical performance, impact analysis, software quality assurance, management, project controls, and project administration. Inherent responsibilities include providing and submitting all plans, records, reports, and data to the customer in accordance with Genova policies and contractual requirements. The CA and PM will maintain liaison with State officials regarding the operational and contractual aspects of the project.

3. PROVIDING ADDITIONAL PERSONNEL

Describe how you plan on providing additional personnel if it becomes necessary to properly staff projects.
As discussed in question 1, Genova has a Resource Planning Team that meets regularly coordinate current and future resource needs.

In addition, Genova has an internal Recruiting Department that works closely with Genova's Resource Planning Team to anticipate vacancies and surge requirements in sufficient time to identify replacement or supplemental candidates.

Another approach Genova uses is to partner with organizations and companies that can provide extensive experience or additional personnel that would be a "fit" for the project. While these companies may compete with Genova in some areas, there can be significant benefits to working together as a team. We refer to this relationship as "co-peting". By forming these partnerships, Genova provides our customers with the best possible team to perform the work.

4. ABILITY TO ADDRESS ISSUES

Describe your company's ability to uniquely address problems and issues related to the service category.

Genova's premier differentiator is the ability to quickly and thoroughly document all system and project requirements with its proprietary technique. Genova is able to track each requirement from analysis, to design, development, testing, and documentation. As new requirements or risks are uncovered, their impact to the schedule and/or budget is discussed with the customer. An adaptive lifecycle approach enables Genova to make the necessary adjustments throughout development, resulting in a final project that exactly suits the customer's needs and adheres to both schedule and cost.

As a small business, Genova takes a personal interest in the success of its customers' projects that often larger organizations can not replicate. Genova's references show that Genova consistently provides a high level of responsiveness, reliability, and flexibility. Genova utilizes project management techniques and methodologies adapted from industry standards and best-practices such as the Project Management Institute' *Body of Knowledge*.

Genova is committed to maintaining effective, consistent communication with the customer throughout all stages of the project. Genova uses a variety of methods to keeping the client involved. Genova submits status reports at regular intervals. Frequent meetings are scheduled to review progress, plan strategies, or mitigate risks. In addition, there are phone calls, emails, and secure access to project information online. Genova has a virtual private network (VPN) solution in place to provide the project team access to project information from the office, home, or while traveling. Genova is also implementing an Enterprise Project Management solution that will allow customers to view project information online 24 hours a day.

TESTING

In many organizations, testing is treated as an inconvenient expense and an after-thought event to the development process. Genova approaches test and evaluation as an activity that spans the entire product lifecycle, from requirements analysis, to development, to integration and deployment. Genova's test strategy also morphs to fit the software development lifecycle that is being used (Waterfall vs. Spiral vs. buying COTS products).

Genova's testing process includes creating a master test plan when the functional specification is established. These two documents mirror each other throughout the life of the development or procurement cycle. The master test plan acts as a blue print for the various teams and disciplines responsible for testing, and it ensures end-to-end completeness and a basis of understanding of responsibilities among the teams.

The other phases of the testing process vary slightly, depending on the type of testing being addressed (i.e. unit vs. system). The phases also have some similarities. For any type of testing, the main purpose of the preparation phase is to understand the details of the specification and to allocate requirements to subsystems, to ensure completeness and traceability. The execution phase begins with "pre-tests" which answers the question: Is the quality of the test object such that it can be effectively tested using the test cases. If yes, then full execution can proceed. Failed test cases can be due to product defect, defect in the specification, defect in the testing infrastructure, or an invalid test case. Once the cause is determined, the rework can begin, and then the test can be run again. The completion phase is

critical for the on-going maintenance and enhancements of the code. During this phase, the testing process is evaluated, statistics are gathered, and a final report is produced.

5. ADOPTING CLIENT POLICIES

Describe your company's practices in adopting client policies and methods.
When beginning a project, Genova requests a copy of the customer's relevant coding standards and any document templates that will be utilized. When the Project Manager sees a value departing from the standard, the issue is discussed with the client. The Project Manager is also responsible for ensuring that the client's quality control and security standards are followed.

Genova has developed a Quality Assurance Manual that includes coding standards, project management methodologies, and other quality procedures. Genova will employ its own policies whenever clients do not have their own in place. If the two policies are in conflict, Genova will defer to the client's policies, unless a real value is gained by veering away from the policy. In this situation, Genova would discuss the advantages of altering the policy with the client and allow the client to make an informed decision regarding which policy to adhere to.

6. OPERATING & COMMUNICATION SYSTEM EXPERIENCE

List each type / brand of operating system/ communication system you are experienced with in each category below and make comments.

System	Experience	Independent Performance	Ability to Teach
Mainframe	Limited	Yes	No
Midrange / Minicomputer	Sun Solaris – Decades of combined experience. Ulta 1, 250, 450 class	Yes	Yes
Client / Server / Distributed Systems	Windows, Unix, Linux, NT	Yes	Yes
Desktop	Windows 9x/NT/2000, Linux, Solaris, ME	Yes	Yes
LAN	Solaris, Microsoft, Novell, NT, 2000, Linux Naming services – DNS, NIS, NIS+, NDS and small amount of LDAP.	Yes	Yes
Languages and DBMS	C++, Visual C++, Borland C++ Builder, C, C#, Java, Ada, ASP.Net, ASP, VB, HTML, XML, Cold Fusion, Crystal Reports, CORBA, COM/DCOM, Portal/Internet Development,	Yes	Yes
Model Based Development	MATLAB/Simulink	Yes	Yes

7. DATABASE EXPERIENCE

Describe your products / experience with Databases.

Product	Experience	Independent Performance	Ability to Teach
Administration	Oracle Certified, SQL Server Certified, Microsoft Access, and ODBC client connections	Yes	Yes
Application Development Tools	Used many languages to create client and web applications tied to databases, SQLAPI with C++ and native Oracle	Yes	Yes
End User Tools	WebCE, Timecard,	Yes	Yes
Structure & Methodologies	UML, N-Tier, EA,	Yes	
Other	SQL statements; ODBC, JDBC.	Yes	Yes

Additional Information

Our company has over 10 years of experience with database design and development with various databases including Microsoft Access, Oracle, Microsoft SQL Server, Progress, DB2, and IDMS.

Our Database administrators are certified in Oracle and Microsoft SQL server 7.0 and 2000. The figure below shows some of the database expertise and services available from Genova.

Database Administration

These types of services would likely be needed by companies that have don't have a full time DBA on staff.

1) **Database set up**
   a) Check for adequate redundancy of control files and redo logs
   b) Proper sizing of roll-back segments and data files
   c) Check for file contention
   d) File striping
2) **Back up**
   a) Review backup/ recovery strategy
   b) OS Scripts for shut-down/backup/startup
   c) Archive redo logs
3) **File Reorganization**
   a) Tables
   b) Indexes
4) **Users**
   a) Password maintenance
   b) Privilege/Role/Profile maintenance
5) **Alert Files**
   a) Check/clean up Alert and Trace files

Database Tuning

These types of services are much more time intensive. Hence, even when a DBA is on staff, they may not have the opportunity to work through the testing required. They are listed in order of diminishing return.

1) **Operating System**
   a) CPU Usage
   b) Memory Usage
2) **System Global Area**
   a) Check sizing of SGA, Shared Pool, Data Dictionary Cache and Library Cache
   b) Tune Buffer cache
   c) Tune Redo Log buffer
3) **I/O**
   a) Tune Checkpoints
   b) Tune background processes
   c) Reallocate/ Reorganize table-spaces
   d) Tune Sort area and Temporary table-space
   e) Tune Rollback segments
4) **Locks and Latches**
   a) Check for contention

Application Tuning

These types of services are much more time intensive. Hence, even when a DBA is on staff, they may not have the opportunity to work through the testing required. This could be done before an application went into production or, assuming the source was available, could be part of an ongoing tuning process. The most effective tuning is done here.

1) **SQL Statements**
   a) Test and recommend changes to application SQL statements
   b) Write packages that may could replace code based SQL calls
   c) Pin packages in memory.
2) **Indexes**
   a) Select most efficient index for application

All of these services assume a single server implementation. Partitioned and possibly multithreaded servers may require special consideration.

ORACLE | PARTNER PROGRAM

8. SOFTWARE EXPERIENCE

What general software applications have you experience in?
Genova's staff averages 15 years industry experience. Genova has created custom software solutions for clients in banking, medical, transportation, communication, and government industries. Genova's unique approach has saved customers millions of dollars.

Application Development
Application development includes multi-tiered, client/server, and web services applications across diverse environments including Windows, Linux, Unix, and embedded operating systems. Genova has extensive experience in leading databases and programming languages. To better server our clients, Genova is committed to staying current with emerging trends and technologies.

Network Design and Remote Management
Genova has developed several WAN and LAN implementations. Networking connections included traditional LAN and WAN protocols as well as wireless and satellite transmissions. Genova also provides remote management over a virtual private network (VPN). This has proven to be the most cost effective solution for our clients that need technical assistance for undetermined times, upon their request.

System Integration
Genova designed, developed, and implemented a worldwide system integration effort that involved a multi-vendor legacy platform environment. This was a global application and installation that included customization of Commercial Off the Shelf (COTS) software. After the successful deployment of the application, Genova has been retained on a consulting services basis to provide support as needed for over eight years.

Web-Based Application Development
Genova has developed several cutting edge web applications that include various functions including data gathering, reporting, and analysis over the web. In order to provide full support to our customers, security services includes Internet Firewalls, Secure Web Servers, Intranet and Extranet site development and clearly defined portal development applications that restrict access and privileges.

9. OTHER EXPERIENCE

Please describe any experience and deployed solutions in each of the following specific technologies below.

Item	Experience	Independent Performance	Ability to Teach
a) Help desk solutions / technologies	See detailed experience below	Yes	Yes
b) Data development	See detailed experience below	Yes	Yes
c) Data modeling	See detailed experience below	Yes	
d) Facilitating and consulting	See detailed experience below	Yes	Yes
e) Photogrametery and remote sensing	See detailed experience below	NA	NA
f) Data collection and clean up mapping	See detailed experience below	Yes	Yes
g) GIS / ESRI Software / Mapinfo	NA	NA	NA
h) Electronic Commerce / EDI	NA	NA	NA
i) Document management	NA	NA	NA
j) Telecommunications wide area network	See detailed experience below	Yes	Yes
k) Biometrics	NA	NA	NA
l) Wireless networking	See detailed experience below	Yes	Yes
m) IT staffing	See detailed experience below	Yes	Yes
n) Graphic / web design	See detailed experience below	Yes	Yes
o) Other	See detailed experience below	Yes	Yes

HELP DESK SOLUTIONS / TECHNOLOGIES

Genova assisted a group within the Department of Defense (DoD) with policies and plans for deploying their IT help desk. This group had distributed, regional help desks, but had been mandated to consolidate and form a centralized help desk at headquarters. This problem required new IT policies and plans. Next, Genova examined help desk industry standards, and the tools and infrastructure available to DoD to solve this problem. One of the leading industry standards for managing a help desk is called ITIL – IT Infrastructure Library. It covers much more than help desk, but is a good basis for developing many infrastructure standards. DoD's help desk system was Remedy™, which is based on ITIL standards. Since the help desk system was in alignment with a proven industry standard, Genova began aligning policies and plans to meet standards. Genova also needed to modify the standards to fit the DoD and its user community. Finally, DoD did not have funding to purchase all of the functionality available in Remedy; therefore, Genova assisted with modification of their policies and plans to fit that subset of functionality. Genova also wrote software to communicate between disparate help desk technologies across the Internet.

DATA DEVELOPMENT

This project highlights Genova's ability to work closely with technology partners in all phases of a project from concept to full integration and testing.

The Advantaged Node Technology (ANT) project is a component of the Multifunctional On the Move Secure Adaptive Integrated Communication (MOSAIC) Advanced Technology Demonstration (ATD) program. The goal of the MOSAIC program was to develop and demonstrate a suite of protocols for providing end-to-end communication services across mobile ad-hoc military networks with assured throughput, latency, and dependable delivery. In particular, this advantaged node technology utilized the enhanced visibility of elevated nodes (or nodes connected to other networks) in a manner that increases the overall capabilities of the network.

Key concepts of the Advantaged Node Technology are:

- Avoiding congestion in nodes that have significantly better connectivity to the members of a target sub network, than does the average node -- for example airborne nodes. Congestion may typically happen in such nodes, because all shortest path routes would tend to flow through this highly connected node. The Advantaged Node Protocols attempt to alleviate this congestion by discovering and manipulating the connectivity at layer 2 in order to create a network topology at layer 3 that only routes certain classes of service through the advantaged nodes.
- Avoiding routing instabilities in nodes with an advantaged position but have dynamic or intermittent connectivity, for example a low moving helicopter. This type of node is considered a disadvantaged node.
- And, taking advantage of nodes with links to additional sub networks, which may offer, for example, long-range one-hop, communications to a similar node in a distant part of the original sub network.

The work on this program started with using the ANT concept and defining the requirements for the software. Work progressed through the software design, modeling, and development. After successful testing and demonstration in the lab environment, the software was ported to a military communications radio. The radios were placed in vehicles in a field test environment

and the technology was successfully demonstrated to potential end users. This technology is intended to play a key role in the communications infrastructure of advanced military radios of the future.

During the program, Genova engineers provided the following services:

- Assist with requirements definition
- Design of the communications software and routing protocol implementation
- Development and coding of the communications software
- Support for execution of the developed code in modeling software packages
- Design the interfaces to allow the software to be installed and configured on the target radios
- Testing within the development lab
- Work with radio hardware engineers to install and configure the software on target radios
- Support for both lab and field demonstrations.

Genova engineers worked closely with Rockwell Collins engineers throughout this project to support the development and, in particular, the integration of the new communications software onto the target radios.

DATA MODELING

Genova has certified database administrators on staff. We have Oracle Certified and Microsoft Certified Application professionals on staff. Collectively, they have over 40 year's industry experience. Following are highlights of projects they have worked on while at Genova:

Iowa DNR
This tool tracks the effluent and influent flow of chemicals deposited into water areas. The program is designed to generate permits for facilities that are requesting to dump pollutants into the water and then tracks the mandatory reports submitted by companies to ensure compliance with environmental regulations.

- Modeled a pollution discharge measurement system in SQL Server that included an XML export to the EPA database.
- Data modeling to convert an IDMS mainframe database to Microsoft SQL Server
- Data modeling to make necessary change to the Microsoft SQL Sever database to Configure it for One Stop Initiative

Siemens
Genova enhanced an existing application to dispatch and track Freeway Service Patrol and Traffic Management Teams. The Freeway Service Patrol consists of tow trucks that are contracted during rush hour traffic to provide assistance to motorists. This assistance can come in the form of a gallon of gas, towing of the vehicle, to transporting of occupants of the vehicle to ensure traffic congestion is minimized. Traffic Management Team vehicles also aid motorists by raising a sign on their trucks to inform motorists that they are approaching a potential traffic incident. These incidents can range from lane closures to detours.

The existing application was used for one-way assignment of incidents from the dispatcher to the vehicles for Police, Fire, and Ambulance. The new development consists of new incident types and the ability of a vehicle operator that discovers an incident to assign himself to that incident while keeping Supervisor vehicles and Dispatch informed of the incidents, their progress, and locations. The vehicles are tracked on an on-screen map and the incident status

is tracked and updated on a separate screen as they respond, arrive at the scene, or complete the incident.

Some of the tasks Genova assisted with are:

- Remapped the data model for a SQL Server database to Oracle converting all entities including tables, views, stored procedures
- Created SQL Server data model for traffic assistance package that modeled support vehicle locations, accidents, and traffic flow incidents.
- Designed to Siemens' database design standards.

Rockwell

Genova developed a common tool to compile assumptions for marketing and sales of aircraft for their Commercial Systems. This new tool was to take six long-term sales and forecast processes and methods across six different business units and consolidate them into one process to support the forecast and variety of requests from managers.

Specific tasks performed by Genova included:

- Provide a common tool to compile Rockwell's assumptions for Market & Sales forecasting for aircraft across six divisions.
- Perform analysis between using SQL Server vs. Microsoft Access
- Allows analysis across the Commercial Service Business
- To Convert 6 Microsoft Excel spreadsheets from six divisions into one process using Microsoft Access.
- Allow import of information from other database's and Microsoft Excel spread sheets
- Allow Data entry of information
- Create reports in Microsoft Excel
  - *Allowed the users to do "what if" scenarios without changing the forecast data.*
  - *Allowed the user to do ad hoc reporting from the information dumped to Microsoft Excel.*

Union Pacific Railroad

Genova created this database driven application allowing locomotives to wirelessly report their location and locomotive health. The application's responsibility was to capture this data, store it in the database, and display to dispatchers any potential mechanical problems that the locomotive was reporting. The goal of the system was to be able to know about mechanical problems before the locomotive came into the depot, so that the necessary parts could be waiting.

The Genova team designed and implemented the Oracle database for storing health information on the various systems installed on a locomotive. This included designing and documenting the Entity Relationship Diagram, Data Dictionary, and DML script. Genova was also responsible for installing the Oracle 7 database server for client. Client tools utilized Visual Basic and ODBC to access the database tables. The database was critical to the success of the project, because much of the data had several inter-dependencies and unknowns. Union Pacific was so impressed with the database design and implementation, that they copied it for some of their other systems (i.e. railroad cars), to do similar applications.

General

Learning and Training Strategic Consulting

Our experienced teams are dedicated to assisting you in analyzing and clarifying business objectives, resulting in successful custom solutions. Every custom solution begins with defining and understanding the audience, available instructional technology (LMS/LCMS), standards (SCORM and 508 compliance) company culture, initiatives, and desired results.

Training Content Development Conversion
Transforming a storyboard, script, or manual into e-learning modules involves more than a simple cut-and-paste process. Off-the-shelf e-learning authoring tools can provide limited interaction and customization. With our custom development solution, a team of developers transforms your content from static text into engaging learning objects, enhancing knowledge transfer resulting in greater retention. We have SCORM and 508 compliancy expertise. *We can convert:*

- PPT, Word or Excel to a web-based module or modules (deployed on our LMS or yours)
- Authorware modules to a web-based module or modules
- Toolbook to a web-based module or modules (deployed on our LMS or yours)
- Video presentations (VHS) to a web-based module or modules (deployed on our LMS or yours)

Training Content Conversion
With our content conversion and development solution, a team of developers can transform your manuals or existing classroom-based training materials. We can supplement your training materials by converting only those pieces/modules that are able to be delivered over Internet.

Our solution is custom and we focus on making sound instructional decisions when converting existing training materials. For example, we do not suggest converting ALL of your classroom-based training materials simply for the sake of putting training on the Internet. We have SCORM and 508 compliancy expertise. *We can convert:*

- Once we analyze your content, audience and delivery goals,
- Testing or quizzes for delivery on the Internet (with custom reporting)
- PPT, Word or Excel to compliment your classroom-based materials
- Video presentations (VHS) to a web-based delivery mode

FACILITATING AND CONSULTING

Genova teaches a requirements analysis and adaptive software development training course, entitled “Managing Projects in ‘Internet Time’”. This training focuses on how to create a productive, satisfying work environment while managing a project from the initial requirements capture phase through to final testing and delivery. The training is divided into four major topic areas. The first area focuses on how to start a project right by kicking off planning the project, defining the mission of the project, and how to execute the initial requirements analysis phase.

The second area then focuses on an in depth requirements capture, development, and analysis methodology. This methodology also can prove completeness of the requirements. This is the most detailed part of the course.

The third section of the course then deals with how to manage a project using the software adaptive lifecycle development process. The waterfall development process has been the standard for several decades. This process works well when all of the requirements are known up front, and the requirements do not change. For most modern projects, the waterfall process does not work well because the users do not know all of the requirements up front, and may

actually change during the software development process. This is where the adaptive lifecycle development process shines. This methodology is iterative, and allows the development team to make “course corrections” to requirements and design during the development process; thereby producing a product that the customer wants and needs while staying within budget and schedule.

The last section of the course is entitled “Teamicide: How to Kill Otherwise Happy, Productive People and Projects.” This part of the course focuses on the results of a twenty-year study that showed that most IT projects fail due to politics, not technology. The study found that for each failure, there was always a technological solution; the failure was due to politics such as hidden agendas/motives, disenchantment with a customer, unclear requirements, etc. This part of the course focuses on how to avoid political problems with cause “teamicide” and to help projects be successful while also providing a fun, productive work environment for the team.

PHOTOGRAMETERY AND REMOTE SENSING

Not Applicable.

DATA COLLECTION

Timecard Tracking System
Genova designed and implemented an Oracle database for time card record keeping. This included designing and documenting the Entity Relationship Diagram, Data Dictionary, and DML script. Genova was also responsible for installing the Oracle 8 database server. Client tools utilized Visual Basic and Oracle Objects for OLE to access the database tables. This project involved migrating data and code from SQL Server to Oracle to MySQL.

Repair Tracking System
Genova designed and implemented an Oracle database for tracking repair data performed on aircraft systems. This included designing and documenting the Entity Relationship Diagram, Data Dictionary, and DML script. Client tools utilized Visual Basic and Oracle Objects for OLE to access the database tables.
Genova assisted The National Cancer Institute and the University of Iowa (from now on, referred to as just “NCI”) with the development of an application for their abstractors to gather cancer data. Abstractors go from hospital to hospital collecting data from cancer cases so that NCI can perform statistical analysis on the data. NCI had two major problems with their existing tool. First, it had several bugs that were slowing down the abstractors so that they were collecting less data. Secondly, NCI had a requirement to be able to gather quickly new information in accordance with the College of Surgeons guidelines. For example, if the College of Surgeons wants data collected on cancer patients who live within fifty miles of a nuclear plant, the tool needed to be quickly adaptable to gather this new information. NCI’s existing tool was not quickly adaptable, and the company owning the tool would take months to respond to new requirements.

National Cancer Institute
This project was on a tight schedule, since the budget for development was the budget allocated to buy the license for the existing tool for the following year. Therefore, if Genova did not finish the project on time, NCI would be in a bind, because the money to buy licenses for the existing tool would have been spent on development and NCI would be left with no abstracting tool. NCI hired Genova to gather, develop, and analyze the requirements of the tool, then to develop, test, and deploy the new tool. Genova met with the NCI staff and investigated the existing tool to document the initial requirements.

The abstractors needed to have a tool that would present to them different data fields to allow them to answer different questions as the College of Surgeon special studies dictated. To fulfill this requirement, Genova used a new technology (XML) in a new, unproven way. Genova identified this high-risk requirement early in the development process and began designing for it. The adaptive lifecycle development process methodology requires high-risk requirements to show an early proof-of-concept so that the risk can be mitigated early. This is what Genova did. Genova showed a successful proof-of-concept of this high-risk requirement during the first 4-6 week cycle that helped set the course for the rest of the project.

The NCI Abstracting tool was finished on-time, in-budget, with complete documentation showing the traceability of requirements from the initial requirements capture documents, through to the design documents, into the code, and finally into the test plan and procedures. The abstractors commented that they were able to complete 50% more abstracts with the new tool and that they were very satisfied.

Chicago Maps ActiveX Tools Document Management
This project demonstrates Genova's ability to deliver requirements engineering services, including requirements capture, development, analysis, and management. This project also demonstrates that Genova's requirements methodology is useful for not only projects to be developed, but also for the purchase of COTS (commercial-off-the-shelf) software.

The Defense Commissary Agency (DeCA) had funding to purchase a Records and Documents Management System. A DeCA resource assigned to gathering the requirements to produce the RFP was tasked with maintaining the existing, antiquated records and documents management system. Due to multiple problems in the existing system, the DeCA employee had fallen far behind schedule in developing the requirements for the new system. He was so far behind, that DeCA was faced with the prospect of losing their funding if the RFP and its responses could not be completed in a timely manner.

DeCA asked Genova to help them quickly develop solid requirements for their new records and documents management system. The Genova team worked with the DeCA staff and DeCA users to develop the requirements. This project was also "politically charged" because records and documents management crossed many domains, and each user domain had strong opinions on how the new system should work. The Genova team not only quickly developed the requirements, but also successfully navigated the political minefield, as stated by an email from the DERMAS Project Manager:

> *As discussed today on the phone, I cannot tell you how valuable Jim has been to the DERMAS effort. I do not know if anyone can save this ship, but Jim sure has been terrific since Day One, coming into a seemingly hopeless situation. His determination, skills, ethics, professionalism, manners (believe me, these came in terribly handy), and ability to stay on track and press forward (amongst the confusion and lack of direction), are just what the DERMAS doctor ordered. He has been positively instrumental in helping to connect a lot of the dots around this place, and he is to be commended…Although we are not through with him (!), I just wanted to take the time to thank you. It is a pleasure to work with Jim.*

GIS / ESRI Software / MapInfo

Not Applicable

Electronic Commerce / EDI

Genova has not had any direct EDI experience, but has researched it and worked with similar technologies.

Telecommunications Wide Area Network

Genova contracted to analyze and build a worldwide remote office network for Naval Exchange Services Command (NEXCOM). When Genova began working on the project in 1993, the 100+ NEXCOM facilities had no connectivity amongst themselves. This resulted in several homegrown applications developed at each location. Many of the applications performed the same functionality, but were running on different platforms, written in multiple languages and accessing disparate databases. It was Genova's task to unify and integrate these systems.

The system delivers office productivity applications, email, and network file and print services to 3000 users around the world using 60 Solaris servers and 1500 PC workstations. This project required very careful planning due to the business requirement that all system administration had to be done by personnel stationed at the corporate headquarters; there would be no technical support at each remote site. A difficult technical hurdle resulted from the client's requirement to use Sun's NIS+. This meant that two Sun Sparc servers were required at each site, according to Sun's recommendation to eliminate risk of system unavailability caused by WAN outages. Genova's network integration experts worked with Sun Consulting to develop custom PC client management software and modified authentication code to eliminate this two-server requirement. In addition, Genova created customized tools to allow the core group of administrators at the corporate headquarters to manage the entire network. Reducing the number of servers at a site from two to one and providing a centralized management system with greater controls operated by just 10 employees ***generated cost savings of $1 Million the first year alone***. These reductions were accomplished by integrating COTS and custom software. The Genova innovations are now included in the Sun releases.

BioMetrics

Genova has done extensive research in the field of Biometrics, but has not had the opportunity to apply it either internally or for a client.

Wireless Networking

Genova developed a world-class application as part of an onboard information network, providing an international transportation customer with a unique system that provides in-flight wireless access to information onboard a server on the aircraft as well as information available on the Internet. Using this technology, airline customers can surf the Internet or check their email while in flight.

Crewmembers can also use the system to support applications that eliminate many of the paper forms required upon arrival and before departure. Using the system's wireless LAN, these applications exchange data between the aircraft and the airline's network at the airport, enabling the airline to save both time and money.

The Wireless LAN Manager (WLM) provides management and health monitoring of the wireless LAN hardware within the unique environment of the aircraft. WLM ensures that the wireless LAN is disabled during critical phases of flight. When the wireless LAN is enabled, WLM ensures that it is operating at a frequency legal in the country where the aircraft is currently located.

WLM is a complex software development effort that requires frequent communication with others involved in the development of the total system, to define the many external interfaces WLM is required to support. WLM supports the following external interfaces:

- SNMP communication with the wireless hardware
- Proprietary communication with the wireless hardware
- Interfaces to two CORBA service processes
- Interface to a discrete I/O driver
- Interface for secure communications to an avionics data controller unit
- SNMP communication with SNMP manager applications
- Interface to an Oracle database
- Interface to XML files for configuration data

Because of the many external interfaces, the application design was required to be multi-threaded to prevent delays in communication over the interfaces. Genova implemented several design patterns within the application to meet performance requirements and provide flexibility as external interfaces changes over the life of the program.

Initial development began with the use of a third party library to handle the direct communication with the wireless hardware. After some early testing, it was determined that the third party library could not support all the requirements. Genova developed a replacement library that required a detailed understanding of how to configure and communicate with the wireless hardware. The new library met all requirements, ***delivered a 10-fold increase in performance,*** and is estimated to ***save the customer approximately $2 million*** over the life of the program.

WLM was initially targeted to run only on the Windows operating system. Recent efforts have required a port to run on Linux. Due to up-front design considerations at the beginning of the project, porting the existing application to Linux was accomplished in approximately 6 weeks.

During development of the WLM application, Genova engineers provided the following efforts:

- Software requirements definition and documentation
- Complete software design of the application and some of the external interfaces with required design documentation
- Software development and coding
- Unit testing of all code
- Software acceptance test plan and procedures documentation
- Support for system integration with actual hardware both locally and in Toulouse, France.
- Installation and configuration support documentation

WLM is currently in production and has been installed on commercial aircraft.

This project highlights many of Genova's abilities to design and develop a complex, yet robust, software application and provide support throughout the project to make it a success.

IT STAFFING

Genova has a recruiting department that supplements the IT staffing needs of our customers locally and nationwide. Genova understands that hiring managers are already overwhelmed with other responsibilities and commitments and we are deeply committed to saving them time

by submitting only highly qualified candidates. Our rigorous screening process has resulted in over 80% of candidates presented being made an offer.

Generally, one of the drawbacks of using supplemental staff to perform on projects is that when their assignment is over and they move on to their next assignment, the project knowledge goes with them. Genova mitigates this issue in two ways. First, whenever possible, Genova assigns a full-time permanent Genova employee to work with the supplemental staff so that Genova retains the knowledge base. Genova has an extremely high employee retention rate. Customers have contacted us years after the completion of a project and were able to speak to original project team members. The second way Genova helps prevent knowledge loss is by scheduling a meeting with the departing contractor(s) for a project review prior to their departure. This extra effort helps our clients long after the project concludes.

Graphic / Web Design

Genova has developed several cutting edge web applications that include various functions including data gathering, reporting, and analysis over the web. In order to provide full support to our customers, security services include Internet Firewalls, Secure Web Servers, and Intranet and Extranet site development and clearly defined portal development applications that restrict access and privileges.

Other

Continuing Education System
Genova, in partnership with the University of Iowa, won a SBIR (Small Business Innovation Research) grant to develop a tool to address the problem of medical errors due to the omission of using guidelines.

Genova provided the technical abilities in database design, database administration, data load balancing, web server technology expertise, intuitive Graphic User Interface design, current off-the-shelf technologies, and networking expertise. The University of Iowa provided clinical medical consulting expertise and guidance during the design phase and crucial field-testing of the now patented WebCE tool.

WebCE allows the physician to gain access to new medical information and standardized medical practices while receiving CME credits during his/her clinic day. The Physician gains this information (and CME credit) in granules as small as one-two minutes. Physicians can even obtain more credits on a subject by requesting links to be sent to them at the end of the clinic day.

The Genova team worked with groups of physicians to determine their requirements, and then designed and built WebCE. Genova also worked with the AMA to insure that the new system would meet AMA CME guidelines.

Invitation to Qualify

Genova Technologies
5250 N River Boulevard NE
Cedar Rapids, Iowa 52411
www.genovatech.com

Contact
Ann Fleckenstein
Dir. Business Development
Phone 319-378-8455
Fax 319-378-8457
ann.fleckenstein@genovatech.com

Woman-Owned Small Business

DUNS
92-985-2820

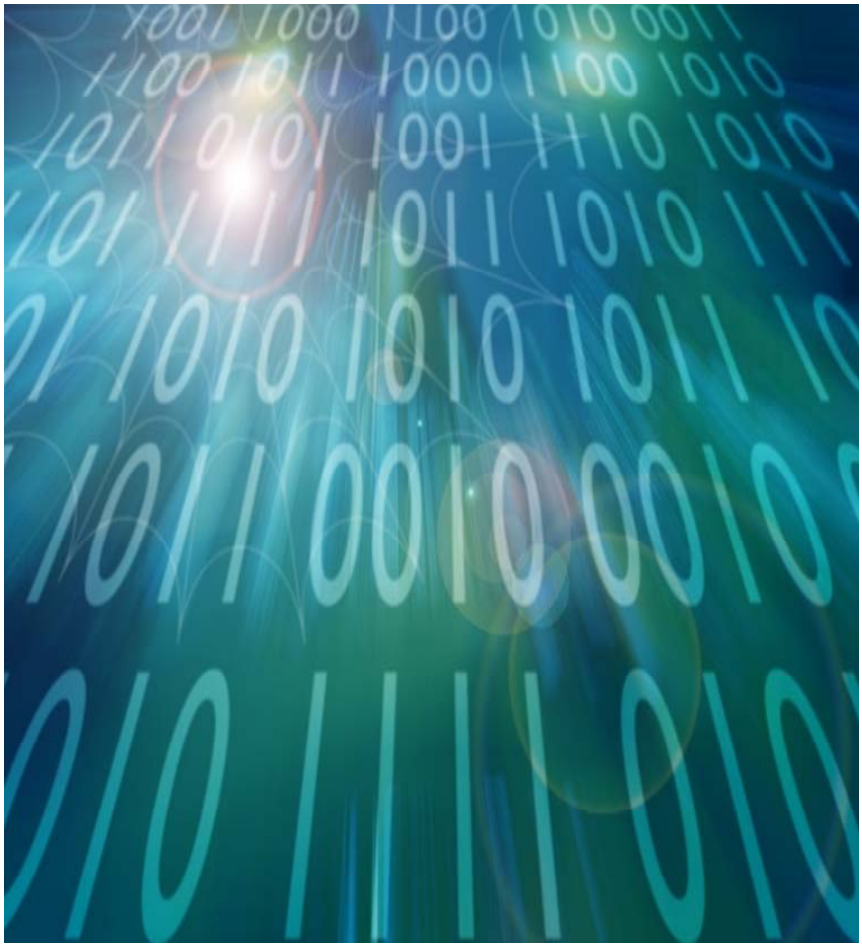
CMS BPA
HHSM-500-2005-00001B

GSA Schedule 70
GSA GS-35F-0303M

NAICS Codes
518210, 541511, 541512, 541519, 54171, 541330, 541611, 611420, 611430

RFP BD80200S102

Developing



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1. PROVIDING RESOURCES

How do you intend to provide the resources required by this ITQ?
Genova has a Resource Planning Team that is responsible for coordinating all resources for current and future projects. The committee meets at least once a week to discuss the progress on existing jobs as well as any potential projects for the future. The Committee utilizes Microsoft Project to organize and track the company's various projects and resources. With this process, Genova has the ability to plan for all projects and resource needs well in advance. This ensures that the company is able to meet all personnel requirements in a timely manner.

2. CONTRACT ADMINISTRATOR

Identify the SP contract administrator and describe the functions that person will perform.
Ann Fleckenstein will act as the contract administrator. Her contact information is as follows: Genova Technologies, 5250 North River Blvd NE, Cedar Rapids, Iowa 52411; (319) 378-8455; ann.fleckenstein@genovatech.com

The contract administrator (CA) will be responsible for the overall performance of the contract in accordance with contractual requirements as well as Genova company policies. The CA will have full responsibility and authority in all areas necessary for the accomplishment of the mission and will be the primary point of contact for business negotiations.

The CA will transition each project over to a Project Manager (PM) who will become the primary point of contact for the technical aspects of the project. The PM will direct staff in areas of cost, schedule, technical performance, impact analysis, software quality assurance, management, project controls, and project administration. Inherent responsibilities include providing and submitting all plans, records, reports, and data to the customer in accordance with Genova policies and contractual requirements. The CA and PM will maintain liaison with State officials regarding the operational and contractual aspects of the project.

3. PROVIDING ADDITIONAL PERSONNEL

Describe how you plan on providing additional personnel if it becomes necessary to properly staff projects.
As discussed in question 1, Genova has a Resource Planning Team that meets regularly coordinate current and future resource needs.

In addition, Genova has an internal Recruiting Department that works closely with Genova's Resource Planning Team to anticipate vacancies and surge requirements in sufficient time to identify replacement or supplemental candidates.

Another approach Genova uses is to partner with organizations and companies that can provide extensive experience or additional personnel that would be a "fit" for the project. While these companies may compete with Genova in some areas, there can be significant benefits to working together as a team. We refer to this relationship as "co-peting". By forming these partnerships, Genova provides our customers with the best possible team to perform the work.

4. ABILITY TO ADDRESS ISSUES

Describe your company's ability to uniquely address problems and issues related to the service category.

Genova's premier differentiator is the ability to quickly and thoroughly document all system and project requirements with its proprietary technique. Genova is able to track each requirement from analysis, to design, development, testing, and documentation. As new requirements or risks are uncovered, their impact to the schedule and/or budget is discussed with the customer. An adaptive lifecycle approach enables Genova to make the necessary adjustments throughout development, resulting in a final project that exactly suits the customer's needs and adheres to both schedule and cost.

As a small business, Genova takes a personal interest in the success of its customers' projects that often larger organizations can not replicate. Genova's references show that Genova consistently provides a high level of responsiveness, reliability, and flexibility. Genova utilizes project management techniques and methodologies adapted from industry standards and best-practices such as the Project Management Institute' *Body of Knowledge*.

Genova is committed to maintaining effective, consistent communication with the customer throughout all stages of the project. Genova uses a variety of methods to keeping the client involved. Genova submits status reports at regular intervals. Frequent meetings are scheduled to review progress, plan strategies, or mitigate risks. In addition, there are phone calls, emails, and secure access to project information online. Genova has a virtual private network (VPN) solution in place to provide the project team access to project information from the office, home, or while traveling. Genova is also implementing an Enterprise Project Management solution that will allow customers to view project information online 24 hours a day.

DEVELOPMENT

Genova's exceptional reputation for delivering custom application development on time, on budget, and on-target is due to a repeatable, proven methodology of application development. Genova's methodology is based on a foundation of:

- strong requirements traceability;
- continual customer communication on direction and progress;
- code based on proven design patterns;
- adherence to coding standards;
- methodical and complete testing process

At the start of development, Genova holds a project planning meeting with the development team, and reviews the requirements document with the team. Genova not only explains to the team *what* needs to be done, but also *why*. Genova has found that if the team understands *why* the customer is spending money on this project, the team will have greater focus, stay in scope, and help mitigate risks much better.

Genova's project management methodology also requires that the riskiest part of the project be developed first, when there is ample time and money to take corrective actions. Delivering a proof-of-concept or prototype of a risky feature early in the project helps the customer gain confidence in the team, and forces timely decisions by the team so that they can keep the momentum moving forward.

While the development team is coding, Genova uses design patterns and coding standards extensively. Genova's use of published, proven software design patterns has led to the creation of flexible, extensible software, allowing our customers projects to adapt quickly as their needs change. An additional benefit of using design patterns is that many experienced software engineers recognize these patterns, and therefore makes the maintenance of the code much easier. A software design pattern is a proven code template of success for solving a particular problem. Since these templates are proven successful, easily recognizable, and quick to code, Genova makes extensive use of these patterns.

Genova's methodology then extends this approach into the actual coding. All source code is labeled with requirement numbers in the header comments, explaining how the code fulfills the requirement. This is not only a good documentation practice to help future developers understand the code, but it also keeps the team in scope. Depending on the size and length of the project, Genova holds a meeting with the customer every four to six weeks to show the customer a deliverable. This continues for the life of the project. During development, the team may encounter obstacles or need to make trade-off choices. If the customer has been engaged and understands the choices, he/she is much more likely to make informed decisions for the overall benefit of the project. Often during development, a customer's requirements may change due to circumstances beyond their control. Without these meetings, the communication of changes may not occur, and the development team can end up creating the "wrong" solution. Finally, having periodic deliverable meetings with customers, forces decisions and progress on the development team.

5. ADOPTING CLIENT POLICIES

Describe your company's practices in adopting client policies and methods.
When beginning a project, Genova requests a copy of the customer's relevant coding standards and any document templates that will be utilized. When the Project Manager sees a value departing from the standard, the issue is discussed with the client. The Project Manager is also responsible for ensuring that the client's quality control and security standards are followed.

Genova has developed a Quality Assurance Manual that includes coding standards, project management methodologies, and other quality procedures. Genova will employ its own policies whenever clients do not have their own in place. If the two policies are in conflict, Genova will defer to the client's policies, unless a real value is gained by veering away from the policy. In this situation, Genova would discuss the advantages of altering the policy with the client and allow the client to make an informed decision regarding which policy to adhere to.

6. OPERATING & COMMUNICATION SYSTEM EXPERIENCE

List each type / brand of operating system/ communication system you are experienced with in each category below and make comments.

System	Experience	Independent Performance	Ability to Teach
Mainframe	Limited	Yes	No
Midrange / Minicomputer	Sun Solaris – Decades of combined experience. Ulta 1, 250, 450 class	Yes	Yes
Client / Server / Distributed Systems	Windows, Unix, Linux, NT	Yes	Yes
Desktop	Windows 9x/NT/2000, Linux, Solaris, ME	Yes	Yes
LAN	Solaris, Microsoft, Novell, NT, 2000, Linux Naming services – DNS, NIS, NIS+, NDS and small amount of LDAP.	Yes	Yes
Languages and DBMS	C++, Visual C++, Borland C++ Builder, C, C#, Java, Ada, ASP.Net, ASP, VB, HTML, XML, Cold Fusion, Crystal Reports, CORBA, COM/DCOM, Portal/Internet Development,	Yes	Yes
Model Based Development	MATLAB/Simulink	Yes	Yes

7. DATABASE EXPERIENCE

Describe your products / experience with Databases.

Product	Experience	Independent Performance	Ability to Teach
Administration	Oracle Certified, SQL Server Certified, Microsoft Access, and ODBC client connections	Yes	Yes
Application Development Tools	Used many languages to create client and web applications tied to databases, SQLAPI with C++ and native Oracle	Yes	Yes
End User Tools	WebCE, Timecard,	Yes	Yes
Structure & Methodologies	UML, N-Tier, EA,	Yes	
Other	SQL statements; ODBC, JDBC.	Yes	Yes

Additional Information

Our company has over 10 years of experience with database design and development with various databases including Microsoft Access, Oracle, Microsoft SQL Server, Progress, DB2, and IDMS.

Our Database administrators are certified in Oracle and Microsoft SQL server 7.0 and 2000. The figure below shows some of the database expertise and services available from Genova.

Database Administration

These types of services would likely be needed by companies that have don't have a full time DBA on staff.

1) **Database set up**
   a) Check for adequate redundancy of control files and redo logs
   b) Proper sizing of roll-back segments and data files
   c) Check for file contention
   d) File striping
2) **Back up**
   a) Review backup/ recovery strategy
   b) OS Scripts for shut-down/backup/startup
   c) Archive redo logs
3) **File Reorganization**
   a) Tables
   b) Indexes
4) **Users**
   a) Password maintenance
   b) Privilege/Role/Profile maintenance
5) **Alert Files**
   a) Check/clean up Alert and Trace files

Database Tuning

These types of services are much more time intensive. Hence, even when a DBA is on staff, they may not have the opportunity to work through the testing required. They are listed in order of diminishing return.

1) **Operating System**
   a) CPU Usage
   b) Memory Usage
2) **System Global Area**
   a) Check sizing of SGA, Shared Pool, Data Dictionary Cache and Library Cache
   b) Tune Buffer cache
   c) Tune Redo Log buffer
3) **I/O**
   a) Tune Checkpoints
   b) Tune background processes
   c) Reallocate/ Reorganize table-spaces
   d) Tune Sort area and Temporary table-space
   e) Tune Rollback segments
4) **Locks and Latches**
   a) Check for contention

Application Tuning

These types of services are much more time intensive. Hence, even when a DBA is on staff, they may not have the opportunity to work through the testing required. This could be done before an application went into production or, assuming the source was available, could be part of an ongoing tuning process. The most effective tuning is done here.

1) **SQL Statements**
   a) Test and recommend changes to application SQL statements
   b) Write packages that may could replace code based SQL calls
   c) Pin packages in memory.
2) **Indexes**
   a) Select most efficient index for application

All of these services assume a single server implementation. Partitioned and possibly multithreaded servers may require special consideration.

ORACLE | PARTNER PROGRAM

8. SOFTWARE EXPERIENCE

What general software applications have you experience in?
Genova's staff averages 15 years industry experience. Genova has created custom software solutions for clients in banking, medical, transportation, communication, and government industries. Genova's unique approach has saved customers millions of dollars.

Application Development
Application development includes multi-tiered, client/server, and web services applications across diverse environments including Windows, Linux, Unix, and embedded operating systems. Genova has extensive experience in leading databases and programming languages. To better server our clients, Genova is committed to staying current with emerging trends and technologies.

Network Design and Remote Management
Genova has developed several WAN and LAN implementations. Networking connections included traditional LAN and WAN protocols as well as wireless and satellite transmissions. Genova also provides remote management over a virtual private network (VPN). This has proven to be the most cost effective solution for our clients that need technical assistance for undetermined times, upon their request.

System Integration
Genova designed, developed, and implemented a worldwide system integration effort that involved a multi-vendor legacy platform environment. This was a global application and installation that included customization of Commercial Off the Shelf (COTS) software. After the successful deployment of the application, Genova has been retained on a consulting services basis to provide support as needed for over eight years.

Web-Based Application Development
Genova has developed several cutting edge web applications that include various functions including data gathering, reporting, and analysis over the web. In order to provide full support to our customers, security services includes Internet Firewalls, Secure Web Servers, Intranet and Extranet site development and clearly defined portal development applications that restrict access and privileges.

9. OTHER EXPERIENCE

Please describe any experience and deployed solutions in each of the following specific technologies below.

Item	Experience	Independent Performance	Ability to Teach
a) Help desk solutions / technologies	See detailed experience below	Yes	Yes
b) Data development	See detailed experience below	Yes	Yes
c) Data modeling	See detailed experience below	Yes	
d) Facilitating and consulting	See detailed experience below	Yes	Yes
e) Photogrametery and remote sensing	See detailed experience below	NA	NA
f) Data collection and clean up mapping	See detailed experience below	Yes	Yes
g) GIS / ESRI Software / Mapinfo	NA	NA	NA
h) Electronic Commerce / EDI	NA	NA	NA
i) Document management	NA	NA	NA
j) Telecommunications wide area network	See detailed experience below	Yes	Yes
k) Biometrics	NA	NA	NA
l) Wireless networking	See detailed experience below	Yes	Yes
m) IT staffing	See detailed experience below	Yes	Yes
n) Graphic / web design	See detailed experience below	Yes	Yes
o) Other	See detailed experience below	Yes	Yes

HELP DESK SOLUTIONS / TECHNOLOGIES

Genova assisted a group within the Department of Defense (DoD) with policies and plans for deploying their IT help desk. This group had distributed, regional help desks, but had been mandated to consolidate and form a centralized help desk at headquarters. This problem required new IT policies and plans. Next, Genova examined help desk industry standards, and the tools and infrastructure available to DoD to solve this problem. One of the leading industry standards for managing a help desk is called ITIL – IT Infrastructure Library. It covers much more than help desk, but is a good basis for developing many infrastructure standards. DoD's help desk system was Remedy™, which is based on ITIL standards. Since the help desk system was in alignment with a proven industry standard, Genova began aligning policies and plans to meet standards. Genova also needed to modify the standards to fit the DoD and its user community. Finally, DoD did not have funding to purchase all of the functionality available in Remedy; therefore, Genova assisted with modification of their policies and plans to fit that subset of functionality. Genova also wrote software to communicate between disparate help desk technologies across the Internet.

DATA DEVELOPMENT

This project highlights Genova's ability to work closely with technology partners in all phases of a project from concept to full integration and testing.

The Advantaged Node Technology (ANT) project is a component of the Multifunctional On the Move Secure Adaptive Integrated Communication (MOSAIC) Advanced Technology Demonstration (ATD) program. The goal of the MOSAIC program was to develop and demonstrate a suite of protocols for providing end-to-end communication services across mobile ad-hoc military networks with assured throughput, latency, and dependable delivery. In particular, this advantaged node technology utilized the enhanced visibility of elevated nodes (or nodes connected to other networks) in a manner that increases the overall capabilities of the network.

Key concepts of the Advantaged Node Technology are:

- Avoiding congestion in nodes that have significantly better connectivity to the members of a target sub network, than does the average node -- for example airborne nodes. Congestion may typically happen in such nodes, because all shortest path routes would tend to flow through this highly connected node. The Advantaged Node Protocols attempt to alleviate this congestion by discovering and manipulating the connectivity at layer 2 in order to create a network topology at layer 3 that only routes certain classes of service through the advantaged nodes.
- Avoiding routing instabilities in nodes with an advantaged position but have dynamic or intermittent connectivity, for example a low moving helicopter. This type of node is considered a disadvantaged node.
- And, taking advantage of nodes with links to additional sub networks, which may offer, for example, long-range one-hop, communications to a similar node in a distant part of the original sub network.

The work on this program started with using the ANT concept and defining the requirements for the software. Work progressed through the software design, modeling, and development. After successful testing and demonstration in the lab environment, the software was ported to a military communications radio. The radios were placed in vehicles in a field test environment

and the technology was successfully demonstrated to potential end users. This technology is intended to play a key role in the communications infrastructure of advanced military radios of the future.

During the program, Genova engineers provided the following services:

- Assist with requirements definition
- Design of the communications software and routing protocol implementation
- Development and coding of the communications software
- Support for execution of the developed code in modeling software packages
- Design the interfaces to allow the software to be installed and configured on the target radios
- Testing within the development lab
- Work with radio hardware engineers to install and configure the software on target radios
- Support for both lab and field demonstrations.

Genova engineers worked closely with Rockwell Collins engineers throughout this project to support the development and, in particular, the integration of the new communications software onto the target radios.

DATA MODELING

Genova has certified database administrators on staff. We have Oracle Certified and Microsoft Certified Application professionals on staff. Collectively, they have over 40 year's industry experience. Following are highlights of projects they have worked on while at Genova:

Iowa DNR
This tool tracks the effluent and influent flow of chemicals deposited into water areas. The program is designed to generate permits for facilities that are requesting to dump pollutants into the water and then tracks the mandatory reports submitted by companies to ensure compliance with environmental regulations.

- Modeled a pollution discharge measurement system in SQL Server that included an XML export to the EPA database.
- Data modeling to convert an IDMS mainframe database to Microsoft SQL Server
- Data modeling to make necessary change to the Microsoft SQL Sever database to Configure it for One Stop Initiative

Siemens
Genova enhanced an existing application to dispatch and track Freeway Service Patrol and Traffic Management Teams. The Freeway Service Patrol consists of tow trucks that are contracted during rush hour traffic to provide assistance to motorists. This assistance can come in the form of a gallon of gas, towing of the vehicle, to transporting of occupants of the vehicle to ensure traffic congestion is minimized. Traffic Management Team vehicles also aid motorists by raising a sign on their trucks to inform motorists that they are approaching a potential traffic incident. These incidents can range from lane closures to detours.

The existing application was used for one-way assignment of incidents from the dispatcher to the vehicles for Police, Fire, and Ambulance. The new development consists of new incident types and the ability of a vehicle operator that discovers an incident to assign himself to that incident while keeping Supervisor vehicles and Dispatch informed of the incidents, their progress, and locations. The vehicles are tracked on an on-screen map and the incident status

is tracked and updated on a separate screen as they respond, arrive at the scene, or complete the incident.

Some of the tasks Genova assisted with are:

- Remapped the data model for a SQL Server database to Oracle converting all entities including tables, views, stored procedures
- Created SQL Server data model for traffic assistance package that modeled support vehicle locations, accidents, and traffic flow incidents.
- Designed to Siemens' database design standards.

Rockwell

Genova developed a common tool to compile assumptions for marketing and sales of aircraft for their Commercial Systems. This new tool was to take six long-term sales and forecast processes and methods across six different business units and consolidate them into one process to support the forecast and variety of requests from managers.

Specific tasks performed by Genova included:

- Provide a common tool to compile Rockwell's assumptions for Market & Sales forecasting for aircraft across six divisions.
- Perform analysis between using SQL Server vs. Microsoft Access
- Allows analysis across the Commercial Service Business
- To Convert 6 Microsoft Excel spreadsheets from six divisions into one process using Microsoft Access.
- Allow import of information from other database's and Microsoft Excel spread sheets
- Allow Data entry of information
- Create reports in Microsoft Excel
  - *Allowed the users to do "what if" scenarios without changing the forecast data.*
  - *Allowed the user to do ad hoc reporting from the information dumped to Microsoft Excel.*

Union Pacific Railroad

Genova created this database driven application allowing locomotives to wirelessly report their location and locomotive health. The application's responsibility was to capture this data, store it in the database, and display to dispatchers any potential mechanical problems that the locomotive was reporting. The goal of the system was to be able to know about mechanical problems before the locomotive came into the depot, so that the necessary parts could be waiting.

The Genova team designed and implemented the Oracle database for storing health information on the various systems installed on a locomotive. This included designing and documenting the Entity Relationship Diagram, Data Dictionary, and DML script. Genova was also responsible for installing the Oracle 7 database server for client. Client tools utilized Visual Basic and ODBC to access the database tables. The database was critical to the success of the project, because much of the data had several inter-dependencies and unknowns. Union Pacific was so impressed with the database design and implementation, that they copied it for some of their other systems (i.e. railroad cars), to do similar applications.

General

Learning and Training Strategic Consulting

Our experienced teams are dedicated to assisting you in analyzing and clarifying business objectives, resulting in successful custom solutions. Every custom solution begins with defining and understanding the audience, available instructional technology (LMS/LCMS), standards (SCORM and 508 compliance) company culture, initiatives, and desired results.

Training Content Development Conversion
Transforming a storyboard, script, or manual into e-learning modules involves more than a simple cut-and-paste process. Off-the-shelf e-learning authoring tools can provide limited interaction and customization. With our custom development solution, a team of developers transforms your content from static text into engaging learning objects, enhancing knowledge transfer resulting in greater retention. We have SCORM and 508 compliancy expertise. *We can convert:*

- PPT, Word or Excel to a web-based module or modules (deployed on our LMS or yours)
- Authorware modules to a web-based module or modules
- Toolbook to a web-based module or modules (deployed on our LMS or yours)
- Video presentations (VHS) to a web-based module or modules (deployed on our LMS or yours)

Training Content Conversion
With our content conversion and development solution, a team of developers can transform your manuals or existing classroom-based training materials. We can supplement your training materials by converting only those pieces/modules that are able to be delivered over Internet.

Our solution is custom and we focus on making sound instructional decisions when converting existing training materials. For example, we do not suggest converting ALL of your classroom-based training materials simply for the sake of putting training on the Internet. We have SCORM and 508 compliancy expertise. *We can convert:*

- Once we analyze your content, audience and delivery goals,
- Testing or quizzes for delivery on the Internet (with custom reporting)
- PPT, Word or Excel to compliment your classroom-based materials
- Video presentations (VHS) to a web-based delivery mode

FACILITATING AND CONSULTING

Genova teaches a requirements analysis and adaptive software development training course, entitled “Managing Projects in ‘Internet Time’”. This training focuses on how to create a productive, satisfying work environment while managing a project from the initial requirements capture phase through to final testing and delivery. The training is divided into four major topic areas. The first area focuses on how to start a project right by kicking off planning the project, defining the mission of the project, and how to execute the initial requirements analysis phase.

The second area then focuses on an in depth requirements capture, development, and analysis methodology. This methodology also can prove completeness of the requirements. This is the most detailed part of the course.

The third section of the course then deals with how to manage a project using the software adaptive lifecycle development process. The waterfall development process has been the standard for several decades. This process works well when all of the requirements are known up front, and the requirements do not change. For most modern projects, the waterfall process does not work well because the users do not know all of the requirements up front, and may

actually change during the software development process. This is where the adaptive lifecycle development process shines. This methodology is iterative, and allows the development team to make “course corrections” to requirements and design during the development process; thereby producing a product that the customer wants and needs while staying within budget and schedule.

The last section of the course is entitled “Teamicide: How to Kill Otherwise Happy, Productive People and Projects.” This part of the course focuses on the results of a twenty-year study that showed that most IT projects fail due to politics, not technology. The study found that for each failure, there was always a technological solution; the failure was due to politics such as hidden agendas/motives, disenchantment with a customer, unclear requirements, etc. This part of the course focuses on how to avoid political problems with cause “teamicide” and to help projects be successful while also providing a fun, productive work environment for the team.

PHOTOGRAMETERY AND REMOTE SENSING

Not Applicable.

DATA COLLECTION

Timecard Tracking System
Genova designed and implemented an Oracle database for time card record keeping. This included designing and documenting the Entity Relationship Diagram, Data Dictionary, and DML script. Genova was also responsible for installing the Oracle 8 database server. Client tools utilized Visual Basic and Oracle Objects for OLE to access the database tables. This project involved migrating data and code from SQL Server to Oracle to MySQL.

Repair Tracking System
Genova designed and implemented an Oracle database for tracking repair data performed on aircraft systems. This included designing and documenting the Entity Relationship Diagram, Data Dictionary, and DML script. Client tools utilized Visual Basic and Oracle Objects for OLE to access the database tables.
Genova assisted The National Cancer Institute and the University of Iowa (from now on, referred to as just “NCI”) with the development of an application for their abstractors to gather cancer data. Abstractors go from hospital to hospital collecting data from cancer cases so that NCI can perform statistical analysis on the data. NCI had two major problems with their existing tool. First, it had several bugs that were slowing down the abstractors so that they were collecting less data. Secondly, NCI had a requirement to be able to gather quickly new information in accordance with the College of Surgeons guidelines. For example, if the College of Surgeons wants data collected on cancer patients who live within fifty miles of a nuclear plant, the tool needed to be quickly adaptable to gather this new information. NCI’s existing tool was not quickly adaptable, and the company owning the tool would take months to respond to new requirements.

National Cancer Institute
This project was on a tight schedule, since the budget for development was the budget allocated to buy the license for the existing tool for the following year. Therefore, if Genova did not finish the project on time, NCI would be in a bind, because the money to buy licenses for the existing tool would have been spent on development and NCI would be left with no abstracting tool. NCI hired Genova to gather, develop, and analyze the requirements of the tool, then to develop, test, and deploy the new tool. Genova met with the NCI staff and investigated the existing tool to document the initial requirements.

The abstractors needed to have a tool that would present to them different data fields to allow them to answer different questions as the College of Surgeon special studies dictated. To fulfill this requirement, Genova used a new technology (XML) in a new, unproven way. Genova identified this high-risk requirement early in the development process and began designing for it. The adaptive lifecycle development process methodology requires high-risk requirements to show an early proof-of-concept so that the risk can be mitigated early. This is what Genova did. Genova showed a successful proof-of-concept of this high-risk requirement during the first 4-6 week cycle that helped set the course for the rest of the project.

The NCI Abstracting tool was finished on-time, in-budget, with complete documentation showing the traceability of requirements from the initial requirements capture documents, through to the design documents, into the code, and finally into the test plan and procedures. The abstractors commented that they were able to complete 50% more abstracts with the new tool and that they were very satisfied.

Chicago Maps ActiveX Tools Document Management
This project demonstrates Genova's ability to deliver requirements engineering services, including requirements capture, development, analysis, and management. This project also demonstrates that Genova's requirements methodology is useful for not only projects to be developed, but also for the purchase of COTS (commercial-off-the-shelf) software.

The Defense Commissary Agency (DeCA) had funding to purchase a Records and Documents Management System. A DeCA resource assigned to gathering the requirements to produce the RFP was tasked with maintaining the existing, antiquated records and documents management system. Due to multiple problems in the existing system, the DeCA employee had fallen far behind schedule in developing the requirements for the new system. He was so far behind, that DeCA was faced with the prospect of losing their funding if the RFP and its responses could not be completed in a timely manner.

DeCA asked Genova to help them quickly develop solid requirements for their new records and documents management system. The Genova team worked with the DeCA staff and DeCA users to develop the requirements. This project was also "politically charged" because records and documents management crossed many domains, and each user domain had strong opinions on how the new system should work. The Genova team not only quickly developed the requirements, but also successfully navigated the political minefield, as stated by an email from the DERMAS Project Manager:

> *As discussed today on the phone, I cannot tell you how valuable Jim has been to the DERMAS effort. I do not know if anyone can save this ship, but Jim sure has been terrific since Day One, coming into a seemingly hopeless situation. His determination, skills, ethics, professionalism, manners (believe me, these came in terribly handy), and ability to stay on track and press forward (amongst the confusion and lack of direction), are just what the DERMAS doctor ordered. He has been positively instrumental in helping to connect a lot of the dots around this place, and he is to be commended…Although we are not through with him (!), I just wanted to take the time to thank you. It is a pleasure to work with Jim.*

GIS / ESRI Software / MapInfo

Not Applicable

Electronic Commerce / EDI

Genova has not had any direct EDI experience, but has researched it and worked with similar technologies.

Telecommunications Wide Area Network

Genova contracted to analyze and build a worldwide remote office network for Naval Exchange Services Command (NEXCOM). When Genova began working on the project in 1993, the 100+ NEXCOM facilities had no connectivity amongst themselves. This resulted in several homegrown applications developed at each location. Many of the applications performed the same functionality, but were running on different platforms, written in multiple languages and accessing disparate databases. It was Genova's task to unify and integrate these systems.

The system delivers office productivity applications, email, and network file and print services to 3000 users around the world using 60 Solaris servers and 1500 PC workstations. This project required very careful planning due to the business requirement that all system administration had to be done by personnel stationed at the corporate headquarters; there would be no technical support at each remote site. A difficult technical hurdle resulted from the client's requirement to use Sun's NIS+. This meant that two Sun Sparc servers were required at each site, according to Sun's recommendation to eliminate risk of system unavailability caused by WAN outages. Genova's network integration experts worked with Sun Consulting to develop custom PC client management software and modified authentication code to eliminate this two-server requirement. In addition, Genova created customized tools to allow the core group of administrators at the corporate headquarters to manage the entire network. Reducing the number of servers at a site from two to one and providing a centralized management system with greater controls operated by just 10 employees ***generated cost savings of $1 Million the first year alone***. These reductions were accomplished by integrating COTS and custom software. The Genova innovations are now included in the Sun releases.

BioMetrics

Genova has done extensive research in the field of Biometrics, but has not had the opportunity to apply it either internally or for a client.

Wireless Networking

Genova developed a world-class application as part of an onboard information network, providing an international transportation customer with a unique system that provides in-flight wireless access to information onboard a server on the aircraft as well as information available on the Internet. Using this technology, airline customers can surf the Internet or check their email while in flight.

Crewmembers can also use the system to support applications that eliminate many of the paper forms required upon arrival and before departure. Using the system's wireless LAN, these applications exchange data between the aircraft and the airline's network at the airport, enabling the airline to save both time and money.

The Wireless LAN Manager (WLM) provides management and health monitoring of the wireless LAN hardware within the unique environment of the aircraft. WLM ensures that the wireless LAN is disabled during critical phases of flight. When the wireless LAN is enabled, WLM ensures that it is operating at a frequency legal in the country where the aircraft is currently located.

WLM is a complex software development effort that requires frequent communication with others involved in the development of the total system, to define the many external interfaces WLM is required to support. WLM supports the following external interfaces:

- SNMP communication with the wireless hardware
- Proprietary communication with the wireless hardware
- Interfaces to two CORBA service processes
- Interface to a discrete I/O driver
- Interface for secure communications to an avionics data controller unit
- SNMP communication with SNMP manager applications
- Interface to an Oracle database
- Interface to XML files for configuration data

Because of the many external interfaces, the application design was required to be multi-threaded to prevent delays in communication over the interfaces. Genova implemented several design patterns within the application to meet performance requirements and provide flexibility as external interfaces changes over the life of the program.

Initial development began with the use of a third party library to handle the direct communication with the wireless hardware. After some early testing, it was determined that the third party library could not support all the requirements. Genova developed a replacement library that required a detailed understanding of how to configure and communicate with the wireless hardware. The new library met all requirements, ***delivered a 10-fold increase in performance,*** and is estimated to ***save the customer approximately $2 million*** over the life of the program.

WLM was initially targeted to run only on the Windows operating system. Recent efforts have required a port to run on Linux. Due to up-front design considerations at the beginning of the project, porting the existing application to Linux was accomplished in approximately 6 weeks.

During development of the WLM application, Genova engineers provided the following efforts:

- Software requirements definition and documentation
- Complete software design of the application and some of the external interfaces with required design documentation
- Software development and coding
- Unit testing of all code
- Software acceptance test plan and procedures documentation
- Support for system integration with actual hardware both locally and in Toulouse, France.
- Installation and configuration support documentation

WLM is currently in production and has been installed on commercial aircraft.

This project highlights many of Genova's abilities to design and develop a complex, yet robust, software application and provide support throughout the project to make it a success.

IT STAFFING

Genova has a recruiting department that supplements the IT staffing needs of our customers locally and nationwide. Genova understands that hiring managers are already overwhelmed with other responsibilities and commitments and we are deeply committed to saving them time

by submitting only highly qualified candidates. Our rigorous screening process has resulted in over 80% of candidates presented being made an offer.

Generally, one of the drawbacks of using supplemental staff to perform on projects is that when their assignment is over and they move on to their next assignment, the project knowledge goes with them. Genova mitigates this issue in two ways. First, whenever possible, Genova assigns a full-time permanent Genova employee to work with the supplemental staff so that Genova retains the knowledge base. Genova has an extremely high employee retention rate. Customers have contacted us years after the completion of a project and were able to speak to original project team members. The second way Genova helps prevent knowledge loss is by scheduling a meeting with the departing contractor(s) for a project review prior to their departure. This extra effort helps our clients long after the project concludes.

Graphic / Web Design

Genova has developed several cutting edge web applications that include various functions including data gathering, reporting, and analysis over the web. In order to provide full support to our customers, security services include Internet Firewalls, Secure Web Servers, and Intranet and Extranet site development and clearly defined portal development applications that restrict access and privileges.

Other

Continuing Education System
Genova, in partnership with the University of Iowa, won a SBIR (Small Business Innovation Research) grant to develop a tool to address the problem of medical errors due to the omission of using guidelines.

Genova provided the technical abilities in database design, database administration, data load balancing, web server technology expertise, intuitive Graphic User Interface design, current off-the-shelf technologies, and networking expertise. The University of Iowa provided clinical medical consulting expertise and guidance during the design phase and crucial field-testing of the now patented WebCE tool.

WebCE allows the physician to gain access to new medical information and standardized medical practices while receiving CME credits during his/her clinic day. The Physician gains this information (and CME credit) in granules as small as one-two minutes. Physicians can even obtain more credits on a subject by requesting links to be sent to them at the end of the clinic day.

The Genova team worked with groups of physicians to determine their requirements, and then designed and built WebCE. Genova also worked with the AMA to insure that the new system would meet AMA CME guidelines.

Invitation to Qualify

Genova Technologies
5250 N River Boulevard NE
Cedar Rapids, Iowa 52411
www.genovatech.com

Contact
Ann Fleckenstein
Dir. Business Development
Phone 319-378-8455
Fax 319-378-8457
ann.fleckenstein@genovatech.com

Woman-Owned Small Business

DUNS
92-985-2820

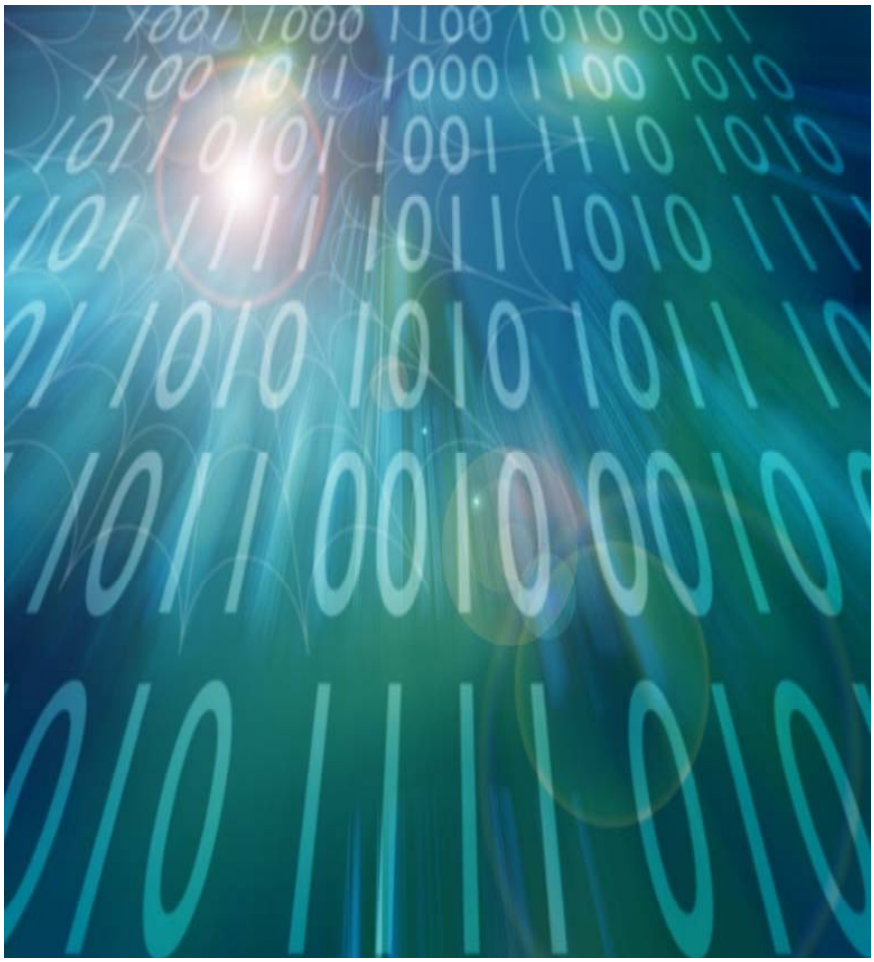
CMS BPA
HHSM-500-2005-00001B

GSA Schedule 70
GSA GS-35F-0303M

NAICS Codes
518210, 541511, 541512, 541519, 54171, 541330, 541611, 611420, 611430

RFP BD80200S102

Design / Planning



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1. PROVIDING RESOURCES

How do you intend to provide the resources required by this ITQ?
Genova has a Resource Planning Team that is responsible for coordinating all resources for current and future projects. The committee meets at least once a week to discuss the progress on existing jobs as well as any potential projects for the future. The Committee utilizes Microsoft Project to organize and track the company's various projects and resources. With this process, Genova has the ability to plan for all projects and resource needs well in advance. This ensures that the company is able to meet all personnel requirements in a timely manner.

2. CONTRACT ADMINISTRATOR

Identify the SP contract administrator and describe the functions that person will perform.
Ann Fleckenstein will act as the contract administrator. Her contact information is as follows: Genova Technologies, 5250 North River Blvd NE, Cedar Rapids, Iowa 52411; (319) 378-8455; ann.fleckenstein@genovatech.com

The contract administrator (CA) will be responsible for the overall performance of the contract in accordance with contractual requirements as well as Genova company policies. The CA will have full responsibility and authority in all areas necessary for the accomplishment of the mission and will be the primary point of contact for business negotiations.

The CA will transition each project over to a Project Manager (PM) who will become the primary point of contact for the technical aspects of the project. The PM will direct staff in areas of cost, schedule, technical performance, impact analysis, software quality assurance, management, project controls, and project administration. Inherent responsibilities include providing and submitting all plans, records, reports, and data to the customer in accordance with Genova policies and contractual requirements. The CA and PM will maintain liaison with State officials regarding the operational and contractual aspects of the project.

3. PROVIDING ADDITIONAL PERSONNEL

Describe how you plan on providing additional personnel if it becomes necessary to properly staff projects.
As discussed in question 1, Genova has a Resource Planning Team that meets regularly coordinate current and future resource needs.

In addition, Genova has an internal Recruiting Department that works closely with Genova's Resource Planning Team to anticipate vacancies and surge requirements in sufficient time to identify replacement or supplemental candidates.

Another approach Genova uses is to partner with organizations and companies that can provide extensive experience or additional personnel that would be a "fit" for the project. While these companies may compete with Genova in some areas, there can be significant benefits to working together as a team. We refer to this relationship as "co-peting". By forming these partnerships, Genova provides our customers with the best possible team to perform the work.

4. ABILITY TO ADDRESS ISSUES

Describe your company's ability to uniquely address problems and issues related to the service category.

Genova's premier differentiator is the ability to quickly and thoroughly document all system and project requirements with its proprietary technique. Genova is able to track each requirement from analysis, to design, development, testing, and documentation. As new requirements or risks are uncovered, their impact to the schedule and/or budget is discussed with the customer. An adaptive lifecycle approach enables Genova to make the necessary adjustments throughout development, resulting in a final project that exactly suits the customer's needs and adheres to both schedule and cost.

As a small business, Genova takes a personal interest in the success of its customers' projects that often larger organizations can not replicate. Genova's references show that Genova consistently provides a high level of responsiveness, reliability, and flexibility. Genova utilizes project management techniques and methodologies adapted from industry standards and best-practices such as the Project Management Institute' *Body of Knowledge*.

Genova is committed to maintaining effective, consistent communication with the customer throughout all stages of the project. Genova uses a variety of methods to keeping the client involved. Genova submits status reports at regular intervals. Frequent meetings are scheduled to review progress, plan strategies, or mitigate risks. In addition, there are phone calls, emails, and secure access to project information online. Genova has a virtual private network (VPN) solution in place to provide the project team access to project information from the office, home, or while traveling. Genova is also implementing an Enterprise Project Management solution that will allow customers to view project information online 24 hours a day.

DESIGN / PLANNING

Genova's approach to project design and planning is highly inclusive of the customer. Genova's first priority is to communicate with the customer to ensure that all system and project requirements are well documented. Genova tracks each requirement from analysis, to design, development, testing, and documentation. As new requirements or risks are uncovered, their impact to schedule and/or budget is discussed with the customer. Genova formulates a plan to mitigate the risks and submits the plan to the customer for approval.

Genova employs an Adaptive Software Development (ASD) lifecycle approach that enables us to make the necessary adjustments throughout the project, resulting in a final project that exactly suits the customer's needs and adheres to both schedule and cost. In many projects, the end deliverable is may not be what the customer thought was needed when the project began.

Overall benefits of ASD include:

- Applications evolve in response to periodic feedback, resulting in a close match to customer requirements.
- Changing business needs are accommodated more easily.
- The development process adapts to the specified quality profile of the product.
- The risk that major failures will occur is reduced; we find the problems in earlier cycles
- Customers gain early confidence in the project.

- Customer benefits are generated earlier, for example, because the customer gets the application more quickly and can use it to increase revenue.

The chart below illustrates a the ASD lifecycle. The first cycle involves mostly analysis, but some design and coding of key elements is done in order to 'prove the concept'. In the second cycle, the focus shifts to design, coding, and testing. In the third cycle, analysis tapers off as does design and coding while testing and planning become the primary tasks.

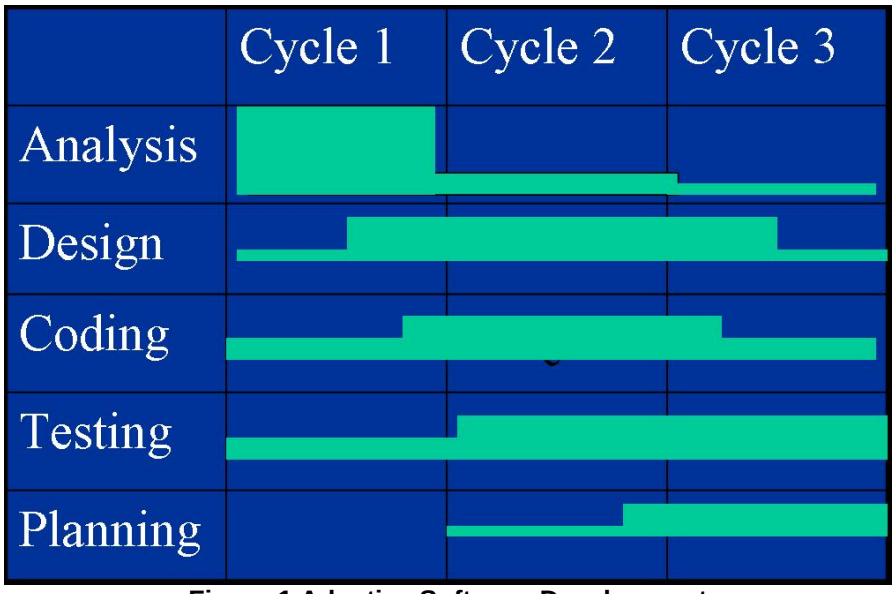

Figure 1 Adaptive Software Development

Experience

Genova has experience with UNIX, Linux and Windows system administration and integration in large environments. Our experience includes NIS, NIS+, DNS, DHCP, NFS, Perl and Shell scripting, C, C++ and Java, SAMBA, LDAP, Active Directory, Microsoft Exchange and UNIX/Linux kernel configurations.

Complementing the above experience, we can also provide expertise with secure remote access (SSL and IPSEC), Linux based firewalls and TCP/IP network management and administration.

Genova is an authorized reseller of the industry leading Aventail SSL VPN appliance. The Aventail appliance provides "state of the art" security and manageability for remote access.

Environments that combine Windows and UNIX servers challenge system administrators to manage accounts and provide simple and effective means for users to share files. Genova can provide assistance in integrating UNIX and Windows Directory and file services using technologies including Windows Active Directory, NIS, SAMBA, LDAP, and Windows Services for UNIX.

If a customer wishes to add or upgrade an entire business software system Genova can assist in the Systems Analysis/Requirements process to ensure that all user's needs are addressed and the resulting system provides the necessary capacity and capabilities. Project examples include an Enterprise Single Sign-On solutions analysis and recommendation study,

Merchandising Systems Timing and Sizing analysis, and Helpdesk process IT Infrastructure Library (ITIL) compliance report.

5. ADOPTING CLIENT POLICIES

Describe your company's practices in adopting client policies and methods.
When beginning a project, Genova requests a copy of the customer's relevant coding standards and any document templates that will be utilized. When the Project Manager sees a value departing from the standard, the issue is discussed with the client. The Project Manager is also responsible for ensuring that the client's quality control and security standards are followed.

Genova has developed a Quality Assurance Manual that includes coding standards, project management methodologies, and other quality procedures. Genova will employ its own policies whenever clients do not have their own in place. If the two policies are in conflict, Genova will defer to the client's policies, unless a real value is gained by veering away from the policy. In this situation, Genova would discuss the advantages of altering the policy with the client and allow the client to make an informed decision regarding which policy to adhere to.

6. OPERATING & COMMUNICATION SYSTEM EXPERIENCE

List each type / brand of operating system/ communication system you are experienced with in each category below and make comments.

System	Experience	Independent Performance	Ability to Teach
Mainframe	Limited	Yes	No
Midrange / Minicomputer	Sun Solaris – Decades of combined experience. Ulta 1, 250, 450 class	Yes	Yes
Client / Server / Distributed Systems	Windows, Unix, Linux, NT	Yes	Yes
Desktop	Windows 9x/NT/2000, Linux, Solaris, ME	Yes	Yes
LAN	Solaris, Microsoft, Novell, NT, 2000, Linux Naming services – DNS, NIS, NIS+, NDS and small amount of LDAP.	Yes	Yes
Languages and DBMS	C++, Visual C++, Borland C++ Builder, C, C#, Java, Ada, ASP.Net, ASP, VB, HTML, XML, Cold Fusion, Crystal Reports, CORBA, COM/DCOM, Portal/Internet Development,	Yes	Yes
Model Based Development	MATLAB/Simulink	Yes	Yes

7. DATABASE EXPERIENCE

Describe your products / experience with Databases.

Product	Experience	Independent Performance	Ability to Teach
Administration	Oracle Certified, SQL Server Certified, Microsoft Access, and ODBC client connections	Yes	Yes
Application Development Tools	Used many languages to create client and web applications tied to databases, SQLAPI with C++ and native Oracle	Yes	Yes
End User Tools	WebCE, Timecard,	Yes	Yes
Structure & Methodologies	UML, N-Tier, EA,	Yes	
Other	SQL statements; ODBC, JDBC.	Yes	Yes

Additional Information

Our company has over 10 years of experience with database design and development with various databases including Microsoft Access, Oracle, Microsoft SQL Server, Progress, DB2, and IDMS.

Our Database administrators are certified in Oracle and Microsoft SQL server 7.0 and 2000. The figure below shows some of the database expertise and services available from Genova.

Database Administration

These types of services would likely be needed by companies that have don't have a full time DBA on staff.

1) **Database set up**
   a) Check for adequate redundancy of control files and redo logs
   b) Proper sizing of roll-back segments and data files
   c) Check for file contention
   d) File striping
2) **Back up**
   a) Review backup/ recovery strategy
   b) OS Scripts for shut-down/backup/startup
   c) Archive redo logs
3) **File Reorganization**
   a) Tables
   b) Indexes
4) **Users**
   a) Password maintenance
   b) Privilege/Role/Profile maintenance
5) **Alert Files**
   a) Check/clean up Alert and Trace files

Database Tuning

These types of services are much more time intensive. Hence, even when a DBA is on staff, they may not have the opportunity to work through the testing required. They are listed in order of diminishing return.

1) **Operating System**
   a) CPU Usage
   b) Memory Usage
2) **System Global Area**
   a) Check sizing of SGA, Shared Pool, Data Dictionary Cache and Library Cache
   b) Tune Buffer cache
   c) Tune Redo Log buffer
3) **I/O**
   a) Tune Checkpoints
   b) Tune background processes
   c) Reallocate/ Reorganize table-spaces
   d) Tune Sort area and Temporary table-space
   e) Tune Rollback segments
4) **Locks and Latches**
   a) Check for contention

Application Tuning

These types of services are much more time intensive. Hence, even when a DBA is on staff, they may not have the opportunity to work through the testing required. This could be done before an application went into production or, assuming the source was available, could be part of an ongoing tuning process. The most effective tuning is done here.

1) **SQL Statements**
   a) Test and recommend changes to application SQL statements
   b) Write packages that may could replace code based SQL calls
   c) Pin packages in memory.
2) **Indexes**
   a) Select most efficient index for application

All of these services assume a single server implementation. Partitioned and possibly multithreaded servers may require special consideration.

ORACLE | PARTNER PROGRAM

8. SOFTWARE EXPERIENCE

What general software applications have you experience in?
Genova's staff averages 15 years industry experience. Genova has created custom software solutions for clients in banking, medical, transportation, communication, and government industries. Genova's unique approach has saved customers millions of dollars.

Application Development
Application development includes multi-tiered, client/server, and web services applications across diverse environments including Windows, Linux, Unix, and embedded operating systems. Genova has extensive experience in leading databases and programming languages. To better server our clients, Genova is committed to staying current with emerging trends and technologies.

Network Design and Remote Management
Genova has developed several WAN and LAN implementations. Networking connections included traditional LAN and WAN protocols as well as wireless and satellite transmissions. Genova also provides remote management over a virtual private network (VPN). This has proven to be the most cost effective solution for our clients that need technical assistance for undetermined times, upon their request.

System Integration
Genova designed, developed, and implemented a worldwide system integration effort that involved a multi-vendor legacy platform environment. This was a global application and installation that included customization of Commercial Off the Shelf (COTS) software. After the successful deployment of the application, Genova has been retained on a consulting services basis to provide support as needed for over eight years.

Web-Based Application Development
Genova has developed several cutting edge web applications that include various functions including data gathering, reporting, and analysis over the web. In order to provide full support to our customers, security services includes Internet Firewalls, Secure Web Servers, Intranet and Extranet site development and clearly defined portal development applications that restrict access and privileges.

9. OTHER EXPERIENCE

Please describe any experience and deployed solutions in each of the following specific technologies below.

Item	Experience	Independent Performance	Ability to Teach
a) Help desk solutions / technologies	See detailed experience below	Yes	Yes
b) Data development	See detailed experience below	Yes	Yes
c) Data modeling	See detailed experience below	Yes	
d) Facilitating and consulting	See detailed experience below	Yes	Yes
e) Photogrametery and remote sensing	See detailed experience below	NA	NA
f) Data collection and clean up mapping	See detailed experience below	Yes	Yes
g) GIS / ESRI Software / Mapinfo	NA	NA	NA
h) Electronic Commerce / EDI	NA	NA	NA
i) Document management	NA	NA	NA
j) Telecommunications wide area network	See detailed experience below	Yes	Yes
k) Biometrics	NA	NA	NA
l) Wireless networking	See detailed experience below	Yes	Yes
m) IT staffing	See detailed experience below	Yes	Yes
n) Graphic / web design	See detailed experience below	Yes	Yes
o) Other	See detailed experience below	Yes	Yes

HELP DESK SOLUTIONS / TECHNOLOGIES

Genova assisted a group within the Department of Defense (DoD) with policies and plans for deploying their IT help desk. This group had distributed, regional help desks, but had been mandated to consolidate and form a centralized help desk at headquarters. This problem required new IT policies and plans. Next, Genova examined help desk industry standards, and the tools and infrastructure available to DoD to solve this problem. One of the leading industry standards for managing a help desk is called ITIL – IT Infrastructure Library. It covers much more than help desk, but is a good basis for developing many infrastructure standards. DoD's help desk system was Remedy™, which is based on ITIL standards. Since the help desk system was in alignment with a proven industry standard, Genova began aligning policies and plans to meet standards. Genova also needed to modify the standards to fit the DoD and its user community. Finally, DoD did not have funding to purchase all of the functionality available in Remedy; therefore, Genova assisted with modification of their policies and plans to fit that subset of functionality. Genova also wrote software to communicate between disparate help desk technologies across the Internet.

DATA DEVELOPMENT

This project highlights Genova's ability to work closely with technology partners in all phases of a project from concept to full integration and testing.

The Advantaged Node Technology (ANT) project is a component of the Multifunctional On the Move Secure Adaptive Integrated Communication (MOSAIC) Advanced Technology Demonstration (ATD) program. The goal of the MOSAIC program was to develop and demonstrate a suite of protocols for providing end-to-end communication services across mobile ad-hoc military networks with assured throughput, latency, and dependable delivery. In particular, this advantaged node technology utilized the enhanced visibility of elevated nodes (or nodes connected to other networks) in a manner that increases the overall capabilities of the network.

Key concepts of the Advantaged Node Technology are:

- Avoiding congestion in nodes that have significantly better connectivity to the members of a target sub network, than does the average node -- for example airborne nodes. Congestion may typically happen in such nodes, because all shortest path routes would tend to flow through this highly connected node. The Advantaged Node Protocols attempt to alleviate this congestion by discovering and manipulating the connectivity at layer 2 in order to create a network topology at layer 3 that only routes certain classes of service through the advantaged nodes.
- Avoiding routing instabilities in nodes with an advantaged position but have dynamic or intermittent connectivity, for example a low moving helicopter. This type of node is considered a disadvantaged node.
- And, taking advantage of nodes with links to additional sub networks, which may offer, for example, long-range one-hop, communications to a similar node in a distant part of the original sub network.

The work on this program started with using the ANT concept and defining the requirements for the software. Work progressed through the software design, modeling, and development. After successful testing and demonstration in the lab environment, the software was ported to a military communications radio. The radios were placed in vehicles in a field test environment

and the technology was successfully demonstrated to potential end users. This technology is intended to play a key role in the communications infrastructure of advanced military radios of the future.

During the program, Genova engineers provided the following services:

- Assist with requirements definition
- Design of the communications software and routing protocol implementation
- Development and coding of the communications software
- Support for execution of the developed code in modeling software packages
- Design the interfaces to allow the software to be installed and configured on the target radios
- Testing within the development lab
- Work with radio hardware engineers to install and configure the software on target radios
- Support for both lab and field demonstrations.

Genova engineers worked closely with Rockwell Collins engineers throughout this project to support the development and, in particular, the integration of the new communications software onto the target radios.

DATA MODELING

Genova has certified database administrators on staff. We have Oracle Certified and Microsoft Certified Application professionals on staff. Collectively, they have over 40 year's industry experience. Following are highlights of projects they have worked on while at Genova:

Iowa DNR
This tool tracks the effluent and influent flow of chemicals deposited into water areas. The program is designed to generate permits for facilities that are requesting to dump pollutants into the water and then tracks the mandatory reports submitted by companies to ensure compliance with environmental regulations.

- Modeled a pollution discharge measurement system in SQL Server that included an XML export to the EPA database.
- Data modeling to convert an IDMS mainframe database to Microsoft SQL Server
- Data modeling to make necessary change to the Microsoft SQL Sever database to Configure it for One Stop Initiative

Siemens
Genova enhanced an existing application to dispatch and track Freeway Service Patrol and Traffic Management Teams. The Freeway Service Patrol consists of tow trucks that are contracted during rush hour traffic to provide assistance to motorists. This assistance can come in the form of a gallon of gas, towing of the vehicle, to transporting of occupants of the vehicle to ensure traffic congestion is minimized. Traffic Management Team vehicles also aid motorists by raising a sign on their trucks to inform motorists that they are approaching a potential traffic incident. These incidents can range from lane closures to detours.

The existing application was used for one-way assignment of incidents from the dispatcher to the vehicles for Police, Fire, and Ambulance. The new development consists of new incident types and the ability of a vehicle operator that discovers an incident to assign himself to that incident while keeping Supervisor vehicles and Dispatch informed of the incidents, their progress, and locations. The vehicles are tracked on an on-screen map and the incident status

is tracked and updated on a separate screen as they respond, arrive at the scene, or complete the incident.

Some of the tasks Genova assisted with are:

- Remapped the data model for a SQL Server database to Oracle converting all entities including tables, views, stored procedures
- Created SQL Server data model for traffic assistance package that modeled support vehicle locations, accidents, and traffic flow incidents.
- Designed to Siemens' database design standards.

Rockwell

Genova developed a common tool to compile assumptions for marketing and sales of aircraft for their Commercial Systems. This new tool was to take six long-term sales and forecast processes and methods across six different business units and consolidate them into one process to support the forecast and variety of requests from managers.

Specific tasks performed by Genova included:

- Provide a common tool to compile Rockwell's assumptions for Market & Sales forecasting for aircraft across six divisions.
- Perform analysis between using SQL Server vs. Microsoft Access
- Allows analysis across the Commercial Service Business
- To Convert 6 Microsoft Excel spreadsheets from six divisions into one process using Microsoft Access.
- Allow import of information from other database's and Microsoft Excel spread sheets
- Allow Data entry of information
- Create reports in Microsoft Excel
  - *Allowed the users to do "what if" scenarios without changing the forecast data.*
  - *Allowed the user to do ad hoc reporting from the information dumped to Microsoft Excel.*

Union Pacific Railroad

Genova created this database driven application allowing locomotives to wirelessly report their location and locomotive health. The application's responsibility was to capture this data, store it in the database, and display to dispatchers any potential mechanical problems that the locomotive was reporting. The goal of the system was to be able to know about mechanical problems before the locomotive came into the depot, so that the necessary parts could be waiting.

The Genova team designed and implemented the Oracle database for storing health information on the various systems installed on a locomotive. This included designing and documenting the Entity Relationship Diagram, Data Dictionary, and DML script. Genova was also responsible for installing the Oracle 7 database server for client. Client tools utilized Visual Basic and ODBC to access the database tables. The database was critical to the success of the project, because much of the data had several inter-dependencies and unknowns. Union Pacific was so impressed with the database design and implementation, that they copied it for some of their other systems (i.e. railroad cars), to do similar applications.

General

Learning and Training Strategic Consulting

Our experienced teams are dedicated to assisting you in analyzing and clarifying business objectives, resulting in successful custom solutions. Every custom solution begins with defining and understanding the audience, available instructional technology (LMS/LCMS), standards (SCORM and 508 compliance) company culture, initiatives, and desired results.

Training Content Development Conversion
Transforming a storyboard, script, or manual into e-learning modules involves more than a simple cut-and-paste process. Off-the-shelf e-learning authoring tools can provide limited interaction and customization. With our custom development solution, a team of developers transforms your content from static text into engaging learning objects, enhancing knowledge transfer resulting in greater retention. We have SCORM and 508 compliancy expertise. *We can convert:*

- PPT, Word or Excel to a web-based module or modules (deployed on our LMS or yours)
- Authorware modules to a web-based module or modules
- Toolbook to a web-based module or modules (deployed on our LMS or yours)
- Video presentations (VHS) to a web-based module or modules (deployed on our LMS or yours)

Training Content Conversion
With our content conversion and development solution, a team of developers can transform your manuals or existing classroom-based training materials. We can supplement your training materials by converting only those pieces/modules that are able to be delivered over Internet.

Our solution is custom and we focus on making sound instructional decisions when converting existing training materials. For example, we do not suggest converting ALL of your classroom-based training materials simply for the sake of putting training on the Internet. We have SCORM and 508 compliancy expertise. *We can convert:*

- Once we analyze your content, audience and delivery goals,
- Testing or quizzes for delivery on the Internet (with custom reporting)
- PPT, Word or Excel to compliment your classroom-based materials
- Video presentations (VHS) to a web-based delivery mode

FACILITATING AND CONSULTING

Genova teaches a requirements analysis and adaptive software development training course, entitled “Managing Projects in ‘Internet Time’”. This training focuses on how to create a productive, satisfying work environment while managing a project from the initial requirements capture phase through to final testing and delivery. The training is divided into four major topic areas. The first area focuses on how to start a project right by kicking off planning the project, defining the mission of the project, and how to execute the initial requirements analysis phase.

The second area then focuses on an in depth requirements capture, development, and analysis methodology. This methodology also can prove completeness of the requirements. This is the most detailed part of the course.

The third section of the course then deals with how to manage a project using the software adaptive lifecycle development process. The waterfall development process has been the standard for several decades. This process works well when all of the requirements are known up front, and the requirements do not change. For most modern projects, the waterfall process does not work well because the users do not know all of the requirements up front, and may

actually change during the software development process. This is where the adaptive lifecycle development process shines. This methodology is iterative, and allows the development team to make “course corrections” to requirements and design during the development process; thereby producing a product that the customer wants and needs while staying within budget and schedule.

The last section of the course is entitled “Teamicide: How to Kill Otherwise Happy, Productive People and Projects.” This part of the course focuses on the results of a twenty-year study that showed that most IT projects fail due to politics, not technology. The study found that for each failure, there was always a technological solution; the failure was due to politics such as hidden agendas/motives, disenchantment with a customer, unclear requirements, etc. This part of the course focuses on how to avoid political problems with cause “teamicide” and to help projects be successful while also providing a fun, productive work environment for the team.

PHOTOGRAMETERY AND REMOTE SENSING

Not Applicable.

DATA COLLECTION

Timecard Tracking System
Genova designed and implemented an Oracle database for time card record keeping. This included designing and documenting the Entity Relationship Diagram, Data Dictionary, and DML script. Genova was also responsible for installing the Oracle 8 database server. Client tools utilized Visual Basic and Oracle Objects for OLE to access the database tables. This project involved migrating data and code from SQL Server to Oracle to MySQL.

Repair Tracking System
Genova designed and implemented an Oracle database for tracking repair data performed on aircraft systems. This included designing and documenting the Entity Relationship Diagram, Data Dictionary, and DML script. Client tools utilized Visual Basic and Oracle Objects for OLE to access the database tables.
Genova assisted The National Cancer Institute and the University of Iowa (from now on, referred to as just “NCI”) with the development of an application for their abstractors to gather cancer data. Abstractors go from hospital to hospital collecting data from cancer cases so that NCI can perform statistical analysis on the data. NCI had two major problems with their existing tool. First, it had several bugs that were slowing down the abstractors so that they were collecting less data. Secondly, NCI had a requirement to be able to gather quickly new information in accordance with the College of Surgeons guidelines. For example, if the College of Surgeons wants data collected on cancer patients who live within fifty miles of a nuclear plant, the tool needed to be quickly adaptable to gather this new information. NCI’s existing tool was not quickly adaptable, and the company owning the tool would take months to respond to new requirements.

National Cancer Institute
This project was on a tight schedule, since the budget for development was the budget allocated to buy the license for the existing tool for the following year. Therefore, if Genova did not finish the project on time, NCI would be in a bind, because the money to buy licenses for the existing tool would have been spent on development and NCI would be left with no abstracting tool. NCI hired Genova to gather, develop, and analyze the requirements of the tool, then to develop, test, and deploy the new tool. Genova met with the NCI staff and investigated the existing tool to document the initial requirements.

The abstractors needed to have a tool that would present to them different data fields to allow them to answer different questions as the College of Surgeon special studies dictated. To fulfill this requirement, Genova used a new technology (XML) in a new, unproven way. Genova identified this high-risk requirement early in the development process and began designing for it. The adaptive lifecycle development process methodology requires high-risk requirements to show an early proof-of-concept so that the risk can be mitigated early. This is what Genova did. Genova showed a successful proof-of-concept of this high-risk requirement during the first 4-6 week cycle that helped set the course for the rest of the project.

The NCI Abstracting tool was finished on-time, in-budget, with complete documentation showing the traceability of requirements from the initial requirements capture documents, through to the design documents, into the code, and finally into the test plan and procedures. The abstractors commented that they were able to complete 50% more abstracts with the new tool and that they were very satisfied.

Chicago Maps ActiveX Tools Document Management
This project demonstrates Genova's ability to deliver requirements engineering services, including requirements capture, development, analysis, and management. This project also demonstrates that Genova's requirements methodology is useful for not only projects to be developed, but also for the purchase of COTS (commercial-off-the-shelf) software.

The Defense Commissary Agency (DeCA) had funding to purchase a Records and Documents Management System. A DeCA resource assigned to gathering the requirements to produce the RFP was tasked with maintaining the existing, antiquated records and documents management system. Due to multiple problems in the existing system, the DeCA employee had fallen far behind schedule in developing the requirements for the new system. He was so far behind, that DeCA was faced with the prospect of losing their funding if the RFP and its responses could not be completed in a timely manner.

DeCA asked Genova to help them quickly develop solid requirements for their new records and documents management system. The Genova team worked with the DeCA staff and DeCA users to develop the requirements. This project was also "politically charged" because records and documents management crossed many domains, and each user domain had strong opinions on how the new system should work. The Genova team not only quickly developed the requirements, but also successfully navigated the political minefield, as stated by an email from the DERMAS Project Manager:

> *As discussed today on the phone, I cannot tell you how valuable Jim has been to the DERMAS effort. I do not know if anyone can save this ship, but Jim sure has been terrific since Day One, coming into a seemingly hopeless situation. His determination, skills, ethics, professionalism, manners (believe me, these came in terribly handy), and ability to stay on track and press forward (amongst the confusion and lack of direction), are just what the DERMAS doctor ordered. He has been positively instrumental in helping to connect a lot of the dots around this place, and he is to be commended…Although we are not through with him (!), I just wanted to take the time to thank you. It is a pleasure to work with Jim.*

GIS / ESRI Software / MapInfo

Not Applicable

Electronic Commerce / EDI

Genova has not had any direct EDI experience, but has researched it and worked with similar technologies.

Telecommunications Wide Area Network

Genova contracted to analyze and build a worldwide remote office network for Naval Exchange Services Command (NEXCOM). When Genova began working on the project in 1993, the 100+ NEXCOM facilities had no connectivity amongst themselves. This resulted in several homegrown applications developed at each location. Many of the applications performed the same functionality, but were running on different platforms, written in multiple languages and accessing disparate databases. It was Genova's task to unify and integrate these systems.

The system delivers office productivity applications, email, and network file and print services to 3000 users around the world using 60 Solaris servers and 1500 PC workstations. This project required very careful planning due to the business requirement that all system administration had to be done by personnel stationed at the corporate headquarters; there would be no technical support at each remote site. A difficult technical hurdle resulted from the client's requirement to use Sun's NIS+. This meant that two Sun Sparc servers were required at each site, according to Sun's recommendation to eliminate risk of system unavailability caused by WAN outages. Genova's network integration experts worked with Sun Consulting to develop custom PC client management software and modified authentication code to eliminate this two-server requirement. In addition, Genova created customized tools to allow the core group of administrators at the corporate headquarters to manage the entire network. Reducing the number of servers at a site from two to one and providing a centralized management system with greater controls operated by just 10 employees ***generated cost savings of $1 Million the first year alone***. These reductions were accomplished by integrating COTS and custom software. The Genova innovations are now included in the Sun releases.

BioMetrics

Genova has done extensive research in the field of Biometrics, but has not had the opportunity to apply it either internally or for a client.

Wireless Networking

Genova developed a world-class application as part of an onboard information network, providing an international transportation customer with a unique system that provides in-flight wireless access to information onboard a server on the aircraft as well as information available on the Internet. Using this technology, airline customers can surf the Internet or check their email while in flight.

Crewmembers can also use the system to support applications that eliminate many of the paper forms required upon arrival and before departure. Using the system's wireless LAN, these applications exchange data between the aircraft and the airline's network at the airport, enabling the airline to save both time and money.

The Wireless LAN Manager (WLM) provides management and health monitoring of the wireless LAN hardware within the unique environment of the aircraft. WLM ensures that the wireless LAN is disabled during critical phases of flight. When the wireless LAN is enabled, WLM ensures that it is operating at a frequency legal in the country where the aircraft is currently located.

WLM is a complex software development effort that requires frequent communication with others involved in the development of the total system, to define the many external interfaces WLM is required to support. WLM supports the following external interfaces:

- SNMP communication with the wireless hardware
- Proprietary communication with the wireless hardware
- Interfaces to two CORBA service processes
- Interface to a discrete I/O driver
- Interface for secure communications to an avionics data controller unit
- SNMP communication with SNMP manager applications
- Interface to an Oracle database
- Interface to XML files for configuration data

Because of the many external interfaces, the application design was required to be multi-threaded to prevent delays in communication over the interfaces. Genova implemented several design patterns within the application to meet performance requirements and provide flexibility as external interfaces changes over the life of the program.

Initial development began with the use of a third party library to handle the direct communication with the wireless hardware. After some early testing, it was determined that the third party library could not support all the requirements. Genova developed a replacement library that required a detailed understanding of how to configure and communicate with the wireless hardware. The new library met all requirements, ***delivered a 10-fold increase in performance,*** and is estimated to ***save the customer approximately $2 million*** over the life of the program.

WLM was initially targeted to run only on the Windows operating system. Recent efforts have required a port to run on Linux. Due to up-front design considerations at the beginning of the project, porting the existing application to Linux was accomplished in approximately 6 weeks.

During development of the WLM application, Genova engineers provided the following efforts:

- Software requirements definition and documentation
- Complete software design of the application and some of the external interfaces with required design documentation
- Software development and coding
- Unit testing of all code
- Software acceptance test plan and procedures documentation
- Support for system integration with actual hardware both locally and in Toulouse, France.
- Installation and configuration support documentation

WLM is currently in production and has been installed on commercial aircraft.

This project highlights many of Genova's abilities to design and develop a complex, yet robust, software application and provide support throughout the project to make it a success.

IT STAFFING

Genova has a recruiting department that supplements the IT staffing needs of our customers locally and nationwide. Genova understands that hiring managers are already overwhelmed with other responsibilities and commitments and we are deeply committed to saving them time

by submitting only highly qualified candidates. Our rigorous screening process has resulted in over 80% of candidates presented being made an offer.

Generally, one of the drawbacks of using supplemental staff to perform on projects is that when their assignment is over and they move on to their next assignment, the project knowledge goes with them. Genova mitigates this issue in two ways. First, whenever possible, Genova assigns a full-time permanent Genova employee to work with the supplemental staff so that Genova retains the knowledge base. Genova has an extremely high employee retention rate. Customers have contacted us years after the completion of a project and were able to speak to original project team members. The second way Genova helps prevent knowledge loss is by scheduling a meeting with the departing contractor(s) for a project review prior to their departure. This extra effort helps our clients long after the project concludes.

Graphic / Web Design

Genova has developed several cutting edge web applications that include various functions including data gathering, reporting, and analysis over the web. In order to provide full support to our customers, security services include Internet Firewalls, Secure Web Servers, and Intranet and Extranet site development and clearly defined portal development applications that restrict access and privileges.

Other

Continuing Education System
Genova, in partnership with the University of Iowa, won a SBIR (Small Business Innovation Research) grant to develop a tool to address the problem of medical errors due to the omission of using guidelines.

Genova provided the technical abilities in database design, database administration, data load balancing, web server technology expertise, intuitive Graphic User Interface design, current off-the-shelf technologies, and networking expertise. The University of Iowa provided clinical medical consulting expertise and guidance during the design phase and crucial field-testing of the now patented WebCE tool.

WebCE allows the physician to gain access to new medical information and standardized medical practices while receiving CME credits during his/her clinic day. The Physician gains this information (and CME credit) in granules as small as one-two minutes. Physicians can even obtain more credits on a subject by requesting links to be sent to them at the end of the clinic day.

The Genova team worked with groups of physicians to determine their requirements, and then designed and built WebCE. Genova also worked with the AMA to insure that the new system would meet AMA CME guidelines.

Invitation to Qualify

Genova Technologies
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Cedar Rapids, Iowa 52411
www.genovatech.com

Contact
Ann Fleckenstein
Dir. Business Development
Phone 319-378-8455
Fax 319-378-8457
ann.fleckenstein@genovatech.com

Woman-Owned Small Business

DUNS
92-985-2820

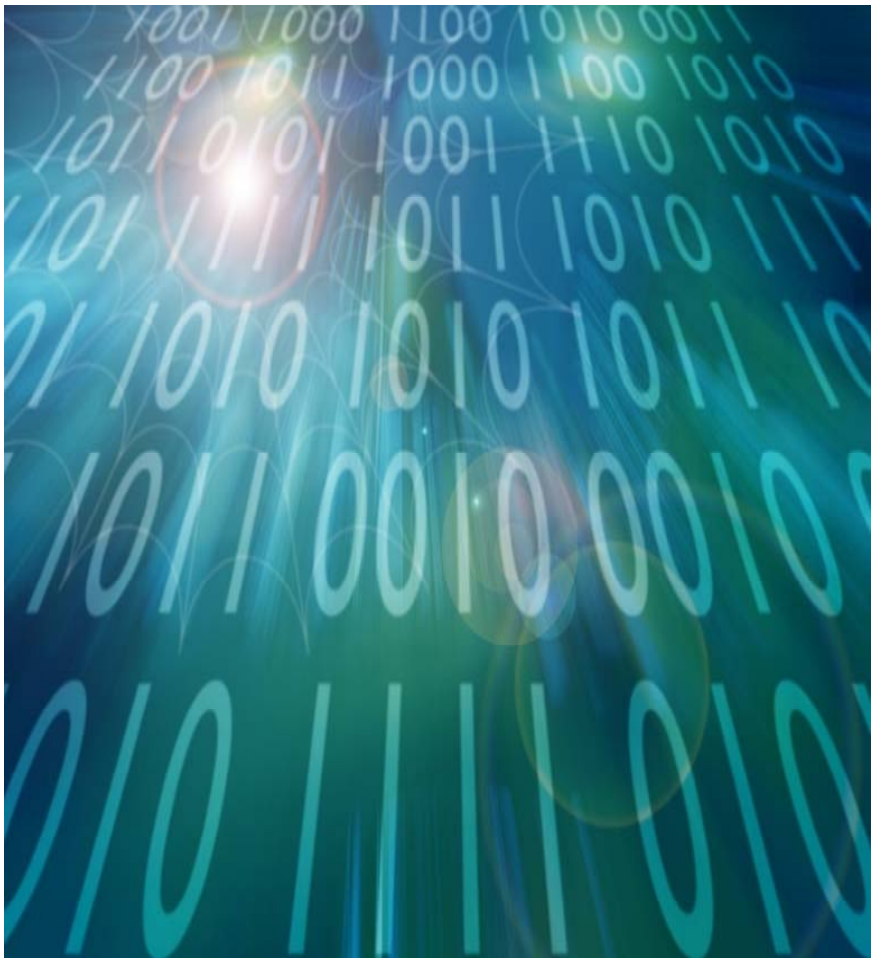
CMS BPA
HHSM-500-2005-00001B

GSA Schedule 70
GSA GS-35F-0303M

NAICS Codes
518210, 541511, 541512, 541519, 54171, 541330, 541611, 611420, 611430

RFP BD80200S102

Project Management



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1. PROVIDING RESOURCES

How do you intend to provide the resources required by this ITQ?
Genova has a Resource Planning Team that is responsible for coordinating all resources for current and future projects. The committee meets at least once a week to discuss the progress on existing jobs as well as any potential projects for the future. The Committee utilizes Microsoft Project to organize and track the company's various projects and resources. With this process, Genova has the ability to plan for all projects and resource needs well in advance. This ensures that the company is able to meet all personnel requirements in a timely manner.

2. CONTRACT ADMINISTRATOR

Identify the SP contract administrator and describe the functions that person will perform.
Ann Fleckenstein will act as the contract administrator. Her contact information is as follows: Genova Technologies, 5250 North River Blvd NE, Cedar Rapids, Iowa 52411; (319) 378-8455; ann.fleckenstein@genovatech.com

The contract administrator (CA) will be responsible for the overall performance of the contract in accordance with contractual requirements as well as Genova company policies. The CA will have full responsibility and authority in all areas necessary for the accomplishment of the mission and will be the primary point of contact for business negotiations.

The CA will transition each project over to a Project Manager (PM) who will become the primary point of contact for the technical aspects of the project. The PM will direct staff in areas of cost, schedule, technical performance, impact analysis, software quality assurance, management, project controls, and project administration. Inherent responsibilities include providing and submitting all plans, records, reports, and data to the customer in accordance with Genova policies and contractual requirements. The CA and PM will maintain liaison with State officials regarding the operational and contractual aspects of the project.

3. PROVIDING ADDITIONAL PERSONNEL

Describe how you plan on providing additional personnel if it becomes necessary to properly staff projects.
As discussed in question 1, Genova has a Resource Planning Team that meets regularly coordinate current and future resource needs.

In addition, Genova has an internal Recruiting Department that works closely with Genova's Resource Planning Team to anticipate vacancies and surge requirements in sufficient time to identify replacement or supplemental candidates.

Another approach Genova uses is to partner with organizations and companies that can provide extensive experience or additional personnel that would be a "fit" for the project. While these companies may compete with Genova in some areas, there can be significant benefits to working together as a team. We refer to this relationship as "co-peting". By forming these partnerships, Genova provides our customers with the best possible team to perform the work.

4. ABILITY TO ADDRESS ISSUES

Describe your company's ability to uniquely address problems and issues related to the service category.

Genova's premier differentiator is the ability to quickly and thoroughly document all system and project requirements with its proprietary technique. Genova is able to track each requirement from analysis, to design, development, testing, and documentation. As new requirements or risks are uncovered, their impact to the schedule and/or budget is discussed with the customer. An adaptive lifecycle approach enables Genova to make the necessary adjustments throughout development, resulting in a final project that exactly suits the customer's needs and adheres to both schedule and cost.

As a small business, Genova takes a personal interest in the success of its customers' projects that often larger organizations can not replicate. Genova's references show that Genova consistently provides a high level of responsiveness, reliability, and flexibility. Genova utilizes project management techniques and methodologies adapted from industry standards and best-practices such as the Project Management Institute' *Body of Knowledge*.

Genova is committed to maintaining effective, consistent communication with the customer throughout all stages of the project. Genova uses a variety of methods to keeping the client involved. Genova submits status reports at regular intervals. Frequent meetings are scheduled to review progress, plan strategies, or mitigate risks. In addition, there are phone calls, emails, and secure access to project information online. Genova has a virtual private network (VPN) solution in place to provide the project team access to project information from the office, home, or while traveling. Genova is also implementing an Enterprise Project Management solution that will allow customers to view project information online 24 hours a day.

PROJECT MANAGEMENT

Genova considers project management an integral part of any project. Genova participates in Project Management Institute (PMI) activities, which provides ongoing training, information and updates on industry best practices.

Our project management methodology is used to organize and manage every project. The Project Manager leads the project through the lifecycle of our information technology Development Methodology. Major tasks include:

- Complete weekly Status Reports, milestones, completed activities, planned activities, issues, and project financial information
- Coordinate and facilitate all project meetings and communications
- Provide overall project direction and clarity of business objectives
- Manage scope of project jointly with the agency
- Maintain Issue Logs and Risk Mitigation Plans
- Develop and execute Communication Plan
- Manage Change Control process
- Coordinate and facilitate checkpoint meetings, deliverables and phase acceptance with client
- Coordinate access to management and project resources
- Utilize Microsoft Project as a planning tool to identify and coordinate project tasks, resources and schedules

Genova believes communication and disseminating knowledge is essential to project success. Keeping stakeholders informed about the project's progress and how it will help them in the future, the more they will participate and benefit. This plan provides a framework for informing, involving, and obtaining buy-in from all participants throughout the duration of the project.

Genova's Project Manager is responsible for developing and maintaining a formal Communication Plan for the project. This Communication Plan recommends a series of meetings, conference calls, and status reports, as well as other means of communication (such as email) to all participants of this project. The Communication Plan identifies the following:

- Who should be communicated to
- What should be communicated
- The frequency of the communication
- The vehicle of communication (email, meetings, conference calls, etc)
- The person(s) responsible for the communication

Risk identification and resolution are important parts of project management. Genova will focus on those factors that impact the deliverables of the phases and the critical communication of the solution design to customer resources. All risk topics will be reviewed with the customer as appropriate.

5. ADOPTING CLIENT POLICIES

Describe your company's practices in adopting client policies and methods.
When beginning a project, Genova requests a copy of the customer's relevant coding standards and any document templates that will be utilized. When the Project Manager sees a value departing from the standard, the issue is discussed with the client. The Project Manager is also responsible for ensuring that the client's quality control and security standards are followed.

Genova has developed a Quality Assurance Manual that includes coding standards, project management methodologies, and other quality procedures. Genova will employ its own policies whenever clients do not have their own in place. If the two policies are in conflict, Genova will defer to the client's policies, unless a real value is gained by veering away from the policy. In this situation, Genova would discuss the advantages of altering the policy with the client and allow the client to make an informed decision regarding which policy to adhere to.

6. OPERATING & COMMUNICATION SYSTEM EXPERIENCE

List each type / brand of operating system/ communication system you are experienced with in each category below and make comments.

System	Experience	Independent Performance	Ability to Teach
Mainframe	Limited	Yes	No
Midrange / Minicomputer	Sun Solaris – Decades of combined experience. Ulta 1, 250, 450 class	Yes	Yes
Client / Server / Distributed Systems	Windows, Unix, Linux, NT	Yes	Yes
Desktop	Windows 9x/NT/2000, Linux, Solaris, ME	Yes	Yes

System	Experience	Independent Performance	Ability to Teach
LAN	Solaris, Microsoft, Novell, NT, 2000, Linux Naming services – DNS, NIS, NIS+, NDS and small amount of LDAP.	Yes	Yes
Languages and DBMS	C++, Visual C++, Borland C++ Builder, C, C#, Java, Ada, ASP.Net, ASP, VB, HTML, XML, Cold Fusion, Crystal Reports, CORBA, COM/DCOM, Portal/Internet Development,	Yes	Yes
Model Based Development	MATLAB/Simulink	Yes	Yes

7. DATABASE EXPERIENCE

Describe your products / experience with Databases.

Product	Experience	Independent Performance	Ability to Teach
Administration	Oracle Certified, SQL Server Certified, Microsoft Access, and ODBC client connections	Yes	Yes
Application Development Tools	Used many languages to create client and web applications tied to databases, SQLAPI with C++ and native Oracle	Yes	Yes
End User Tools	WebCE, Timecard,	Yes	Yes
Structure & Methodologies	UML, N-Tier, EA,	Yes	
Other	SQL statements; ODBC, JDBC.	Yes	Yes

Additional Information

Our company has over 10 years of experience with database design and development with various databases including Microsoft Access, Oracle, Microsoft SQL Server, Progress, DB2, and IDMS.

Our Database administrators are certified in Oracle and Microsoft SQL server 7.0 and 2000. The figure below shows some of the database expertise and services available from Genova.

Database Administration

These types of services would likely be needed by companies that have don't have a full time DBA on staff.

1) **Database set up**
   a) Check for adequate redundancy of control files and redo logs
   b) Proper sizing of roll-back segments and data files
   c) Check for file contention
   d) File striping
2) **Back up**
   a) Review backup/ recovery strategy
   b) OS Scripts for shut-down/backup/startup
   c) Archive redo logs
3) **File Reorganization**
   a) Tables
   b) Indexes
4) **Users**
   a) Password maintenance
   b) Privilege/Role/Profile maintenance
5) **Alert Files**
   a) Check/clean up Alert and Trace files

Database Tuning

These types of services are much more time intensive. Hence, even when a DBA is on staff, they may not have the opportunity to work through the testing required. They are listed in order of diminishing return.

1) **Operating System**
   a) CPU Usage
   b) Memory Usage
2) **System Global Area**
   a) Check sizing of SGA, Shared Pool, Data Dictionary Cache and Library Cache
   b) Tune Buffer cache
   c) Tune Redo Log buffer
3) **I/O**
   a) Tune Checkpoints
   b) Tune background processes
   c) Reallocate/ Reorganize table-spaces
   d) Tune Sort area and Temporary table-space
   e) Tune Rollback segments
4) **Locks and Latches**
   a) Check for contention

Application Tuning

These types of services are much more time intensive. Hence, even when a DBA is on staff, they may not have the opportunity to work through the testing required. This could be done before an application went into production or, assuming the source was available, could be part of an ongoing tuning process. The most effective tuning is done here.

1) **SQL Statements**
   a) Test and recommend changes to application SQL statements
   b) Write packages that may could replace code based SQL calls
   c) Pin packages in memory.
2) **Indexes**
   a) Select most efficient index for application

All of these services assume a single server implementation. Partitioned and possibly multithreaded servers may require special consideration.

ORACLE | PARTNER PROGRAM

8. SOFTWARE EXPERIENCE

What general software applications have you experience in?
Genova's staff averages 15 years industry experience. Genova has created custom software solutions for clients in banking, medical, transportation, communication, and government industries. Genova's unique approach has saved customers millions of dollars.

Application Development
Application development includes multi-tiered, client/server, and web services applications across diverse environments including Windows, Linux, Unix, and embedded operating systems. Genova has extensive experience in leading databases and programming languages. To better server our clients, Genova is committed to staying current with emerging trends and technologies.

Network Design and Remote Management
Genova has developed several WAN and LAN implementations. Networking connections included traditional LAN and WAN protocols as well as wireless and satellite transmissions. Genova also provides remote management over a virtual private network (VPN). This has proven to be the most cost effective solution for our clients that need technical assistance for undetermined times, upon their request.

System Integration
Genova designed, developed, and implemented a worldwide system integration effort that involved a multi-vendor legacy platform environment. This was a global application and installation that included customization of Commercial Off the Shelf (COTS) software. After the successful deployment of the application, Genova has been retained on a consulting services basis to provide support as needed for over eight years.

Web-Based Application Development
Genova has developed several cutting edge web applications that include various functions including data gathering, reporting, and analysis over the web. In order to provide full support to our customers, security services includes Internet Firewalls, Secure Web Servers, Intranet and Extranet site development and clearly defined portal development applications that restrict access and privileges.

9. OTHER EXPERIENCE

Please describe any experience and deployed solutions in each of the following specific technologies below.

Item	Experience	Independent Performance	Ability to Teach
a) Help desk solutions / technologies	See detailed experience below	Yes	Yes
b) Data development	See detailed experience below	Yes	Yes
c) Data modeling	See detailed experience below	Yes	
d) Facilitating and consulting	See detailed experience below	Yes	Yes
e) Photogrametery and remote sensing	See detailed experience below	NA	NA
f) Data collection and clean up mapping	See detailed experience below	Yes	Yes
g) GIS / ESRI Software / Mapinfo	NA	NA	NA
h) Electronic Commerce / EDI	NA	NA	NA
i) Document management	NA	NA	NA
j) Telecommunications wide area network	See detailed experience below	Yes	Yes
k) Biometrics	NA	NA	NA
l) Wireless networking	See detailed experience below	Yes	Yes
m) IT staffing	See detailed experience below	Yes	Yes
n) Graphic / web design	See detailed experience below	Yes	Yes
o) Other	See detailed experience below	Yes	Yes

HELP DESK SOLUTIONS / TECHNOLOGIES

Genova assisted a group within the Department of Defense (DoD) with policies and plans for deploying their IT help desk. This group had distributed, regional help desks, but had been mandated to consolidate and form a centralized help desk at headquarters. This problem required new IT policies and plans. Next, Genova examined help desk industry standards, and the tools and infrastructure available to DoD to solve this problem. One of the leading industry standards for managing a help desk is called ITIL – IT Infrastructure Library. It covers much more than help desk, but is a good basis for developing many infrastructure standards. DoD's

help desk system was Remedy™, which is based on ITIL standards. Since the help desk system was in alignment with a proven industry standard, Genova began aligning policies and plans to meet standards. Genova also needed to modify the standards to fit the DoD and its user community. Finally, DoD did not have funding to purchase all of the functionality available in Remedy; therefore, Genova assisted with modification of their policies and plans to fit that subset of functionality. Genova also wrote software to communicate between disparate help desk technologies across the Internet.

DATA DEVELOPMENT

This project highlights Genova's ability to work closely with technology partners in all phases of a project from concept to full integration and testing.

The Advantaged Node Technology (ANT) project is a component of the Multifunctional On the Move Secure Adaptive Integrated Communication (MOSAIC) Advanced Technology Demonstration (ATD) program. The goal of the MOSAIC program was to develop and demonstrate a suite of protocols for providing end-to-end communication services across mobile ad-hoc military networks with assured throughput, latency, and dependable delivery. In particular, this advantaged node technology utilized the enhanced visibility of elevated nodes (or nodes connected to other networks) in a manner that increases the overall capabilities of the network.

Key concepts of the Advantaged Node Technology are:

- Avoiding congestion in nodes that have significantly better connectivity to the members of a target sub network, than does the average node -- for example airborne nodes. Congestion may typically happen in such nodes, because all shortest path routes would tend to flow through this highly connected node. The Advantaged Node Protocols attempt to alleviate this congestion by discovering and manipulating the connectivity at layer 2 in order to create a network topology at layer 3 that only routes certain classes of service through the advantaged nodes.
- Avoiding routing instabilities in nodes with an advantaged position but have dynamic or intermittent connectivity, for example a low moving helicopter. This type of node is considered a disadvantaged node.
- And, taking advantage of nodes with links to additional sub networks, which may offer, for example, long-range one-hop, communications to a similar node in a distant part of the original sub network.

The work on this program started with using the ANT concept and defining the requirements for the software. Work progressed through the software design, modeling, and development. After successful testing and demonstration in the lab environment, the software was ported to a military communications radio. The radios were placed in vehicles in a field test environment and the technology was successfully demonstrated to potential end users. This technology is intended to play a key role in the communications infrastructure of advanced military radios of the future.

During the program, Genova engineers provided the following services:

- Assist with requirements definition
- Design of the communications software and routing protocol implementation
- Development and coding of the communications software
- Support for execution of the developed code in modeling software packages

- Design the interfaces to allow the software to be installed and configured on the target radios
- Testing within the development lab
- Work with radio hardware engineers to install and configure the software on target radios
- Support for both lab and field demonstrations.

Genova engineers worked closely with Rockwell Collins engineers throughout this project to support the development and, in particular, the integration of the new communications software onto the target radios.

DATA MODELING

Genova has certified database administrators on staff. We have Oracle Certified and Microsoft Certified Application professionals on staff. Collectively, they have over 40 year's industry experience. Following are highlights of projects they have worked on while at Genova:

Iowa DNR
This tool tracks the effluent and influent flow of chemicals deposited into water areas. The program is designed to generate permits for facilities that are requesting to dump pollutants into the water and then tracks the mandatory reports submitted by companies to ensure compliance with environmental regulations.

- Modeled a pollution discharge measurement system in SQL Server that included an XML export to the EPA database.
- Data modeling to convert an IDMS mainframe database to Microsoft SQL Server
- Data modeling to make necessary change to the Microsoft SQL Sever database to Configure it for One Stop Initiative

Siemens
Genova enhanced an existing application to dispatch and track Freeway Service Patrol and Traffic Management Teams. The Freeway Service Patrol consists of tow trucks that are contracted during rush hour traffic to provide assistance to motorists. This assistance can come in the form of a gallon of gas, towing of the vehicle, to transporting of occupants of the vehicle to ensure traffic congestion is minimized. Traffic Management Team vehicles also aid motorists by raising a sign on their trucks to inform motorists that they are approaching a potential traffic incident. These incidents can range from lane closures to detours.

The existing application was used for one-way assignment of incidents from the dispatcher to the vehicles for Police, Fire, and Ambulance. The new development consists of new incident types and the ability of a vehicle operator that discovers an incident to assign himself to that incident while keeping Supervisor vehicles and Dispatch informed of the incidents, their progress, and locations. The vehicles are tracked on an on-screen map and the incident status is tracked and updated on a separate screen as they respond, arrive at the scene, or complete the incident.

Some of the tasks Genova assisted with are:

- Remapped the data model for a SQL Server database to Oracle converting all entities including tables, views, stored procedures
- Created SQL Server data model for traffic assistance package that modeled support vehicle locations, accidents, and traffic flow incidents.
- Designed to Siemens' database design standards.

Rockwell
Genova developed a common tool to compile assumptions for marketing and sales of aircraft for their Commercial Systems. This new tool was to take six long-term sales and forecast processes and methods across six different business units and consolidate them into one process to support the forecast and variety of requests from managers.

Specific tasks performed by Genova included:

- Provide a common tool to compile Rockwell's assumptions for Market & Sales forecasting for aircraft across six divisions.
- Perform analysis between using SQL Server vs. Microsoft Access
- Allows analysis across the Commercial Service Business
- To Convert 6 Microsoft Excel spreadsheets from six divisions into one process using Microsoft Access.
- Allow import of information from other database's and Microsoft Excel spread sheets
- Allow Data entry of information
- Create reports in Microsoft Excel
  - *Allowed the users to do "what if" scenarios without changing the forecast data.*
  - *Allowed the user to do ad hoc reporting from the information dumped to Microsoft Excel.*

Union Pacific Railroad
Genova created this database driven application allowing locomotives to wirelessly report their location and locomotive health. The application's responsibility was to capture this data, store it in the database, and display to dispatchers any potential mechanical problems that the locomotive was reporting. The goal of the system was to be able to know about mechanical problems before the locomotive came into the depot, so that the necessary parts could be waiting.

The Genova team designed and implemented the Oracle database for storing health information on the various systems installed on a locomotive. This included designing and documenting the Entity Relationship Diagram, Data Dictionary, and DML script. Genova was also responsible for installing the Oracle 7 database server for client. Client tools utilized Visual Basic and ODBC to access the database tables. The database was critical to the success of the project, because much of the data had several inter-dependencies and unknowns. Union Pacific was so impressed with the database design and implementation, that they copied it for some of their other systems (i.e. railroad cars), to do similar applications.

General

Learning and Training Strategic Consulting
Our experienced teams are dedicated to assisting you in analyzing and clarifying business objectives, resulting in successful custom solutions. Every custom solution begins with defining and understanding the audience, available instructional technology (LMS/LCMS), standards (SCORM and 508 compliance) company culture, initiatives, and desired results.

Training Content Development Conversion
Transforming a storyboard, script, or manual into e-learning modules involves more than a simple cut-and-paste process. Off-the-shelf e-learning authoring tools can provide limited interaction and customization. With our custom development solution, a team of developers transforms your content from static text into engaging learning objects, enhancing knowledge

transfer resulting in greater retention. We have SCORM and 508 compliancy expertise. *We can convert:*

- PPT, Word or Excel to a web-based module or modules (deployed on our LMS or yours)
- Authorware modules to a web-based module or modules
- Toolbook to a web-based module or modules (deployed on our LMS or yours)
- Video presentations (VHS) to a web-based module or modules (deployed on our LMS or yours)

Training Content Conversion

With our content conversion and development solution, a team of developers can transform your manuals or existing classroom-based training materials. We can supplement your training materials by converting only those pieces/modules that are able to be delivered over Internet.

Our solution is custom and we focus on making sound instructional decisions when converting existing training materials. For example, we do not suggest converting ALL of your classroom-based training materials simply for the sake of putting training on the Internet. We have SCORM and 508 compliancy expertise. *We can convert:*

- Once we analyze your content, audience and delivery goals,
- Testing or quizzes for delivery on the Internet (with custom reporting)
- PPT, Word or Excel to compliment your classroom-based materials
- Video presentations (VHS) to a web-based delivery mode

FACILITATING AND CONSULTING

Genova teaches a requirements analysis and adaptive software development training course, entitled “Managing Projects in ‘Internet Time’”. This training focuses on how to create a productive, satisfying work environment while managing a project from the initial requirements capture phase through to final testing and delivery. The training is divided into four major topic areas. The first area focuses on how to start a project right by kicking off planning the project, defining the mission of the project, and how to execute the initial requirements analysis phase.

The second area then focuses on an in depth requirements capture, development, and analysis methodology. This methodology also can prove completeness of the requirements. This is the most detailed part of the course.

The third section of the course then deals with how to manage a project using the software adaptive lifecycle development process. The waterfall development process has been the standard for several decades. This process works well when all of the requirements are known up front, and the requirements do not change. For most modern projects, the waterfall process does not work well because the users do not know all of the requirements up front, and may actually change during the software development process. This is where the adaptive lifecycle development process shines. This methodology is iterative, and allows the development team to make “course corrections” to requirements and design during the development process; thereby producing a product that the customer wants and needs while staying within budget and schedule.

The last section of the course is entitled “Teamicide: How to Kill Otherwise Happy, Productive People and Projects.” This part of the course focuses on the results of a twenty-year study that showed that most IT projects fail due to politics, not technology. The study found that for each failure, there was always a technological solution; the failure was due to politics such as hidden

agendas/motives, disenchantment with a customer, unclear requirements, etc. This part of the course focuses on how to avoid political problems with cause “teamicide” and to help projects be successful while also providing a fun, productive work environment for the team.

PHOTOGRAMETERY AND REMOTE SENSING

Not Applicable.

DATA COLLECTION

Timecard Tracking System
Genova designed and implemented an Oracle database for time card record keeping. This included designing and documenting the Entity Relationship Diagram, Data Dictionary, and DML script. Genova was also responsible for installing the Oracle 8 database server. Client tools utilized Visual Basic and Oracle Objects for OLE to access the database tables. This project involved migrating data and code from SQL Server to Oracle to MySQL.

Repair Tracking System
Genova designed and implemented an Oracle database for tracking repair data performed on aircraft systems. This included designing and documenting the Entity Relationship Diagram, Data Dictionary, and DML script. Client tools utilized Visual Basic and Oracle Objects for OLE to access the database tables.
Genova assisted The National Cancer Institute and the University of Iowa (from now on, referred to as just “NCI”) with the development of an application for their abstractors to gather cancer data. Abstractors go from hospital to hospital collecting data from cancer cases so that NCI can perform statistical analysis on the data. NCI had two major problems with their existing tool. First, it had several bugs that were slowing down the abstractors so that they were collecting less data. Secondly, NCI had a requirement to be able to gather quickly new information in accordance with the College of Surgeons guidelines. For example, if the College of Surgeons wants data collected on cancer patients who live within fifty miles of a nuclear plant, the tool needed to be quickly adaptable to gather this new information. NCI’s existing tool was not quickly adaptable, and the company owning the tool would take months to respond to new requirements.

National Cancer Institute
This project was on a tight schedule, since the budget for development was the budget allocated to buy the license for the existing tool for the following year. Therefore, if Genova did not finish the project on time, NCI would be in a bind, because the money to buy licenses for the existing tool would have been spent on development and NCI would be left with no abstracting tool. NCI hired Genova to gather, develop, and analyze the requirements of the tool, then to develop, test, and deploy the new tool. Genova met with the NCI staff and investigated the existing tool to document the initial requirements.

The abstractors needed to have a tool that would present to them different data fields to allow them to answer different questions as the College of Surgeon special studies dictated. To fulfill this requirement, Genova used a new technology (XML) in a new, unproven way. Genova identified this high-risk requirement early in the development process and began designing for it. The adaptive lifecycle development process methodology requires high-risk requirements to show an early proof-of-concept so that the risk can be mitigated early. This is what Genova did. Genova showed a successful proof-of-concept of this high-risk requirement during the first 4-6 week cycle that helped set the course for the rest of the project.

The NCI Abstracting tool was finished on-time, in-budget, with complete documentation showing the traceability of requirements from the initial requirements capture documents, through to the design documents, into the code, and finally into the test plan and procedures. The abstractors commented that they were able to complete 50% more abstracts with the new tool and that they were very satisfied.

Chicago Maps ActiveX Tools Document Management
This project demonstrates Genova's ability to deliver requirements engineering services, including requirements capture, development, analysis, and management. This project also demonstrates that Genova's requirements methodology is useful for not only projects to be developed, but also for the purchase of COTS (commercial-off-the-shelf) software.

The Defense Commissary Agency (DeCA) had funding to purchase a Records and Documents Management System. A DeCA resource assigned to gathering the requirements to produce the RFP was tasked with maintaining the existing, antiquated records and documents management system. Due to multiple problems in the existing system, the DeCA employee had fallen far behind schedule in developing the requirements for the new system. He was so far behind, that DeCA was faced with the prospect of losing their funding if the RFP and its responses could not be completed in a timely manner.

DeCA asked Genova to help them quickly develop solid requirements for their new records and documents management system. The Genova team worked with the DeCA staff and DeCA users to develop the requirements. This project was also "politically charged" because records and documents management crossed many domains, and each user domain had strong opinions on how the new system should work. The Genova team not only quickly developed the requirements, but also successfully navigated the political minefield, as stated by an email from the DERMAS Project Manager:

> *As discussed today on the phone, I cannot tell you how valuable Jim has been to the DERMAS effort. I do not know if anyone can save this ship, but Jim sure has been terrific since Day One, coming into a seemingly hopeless situation. His determination, skills, ethics, professionalism, manners (believe me, these came in terribly handy), and ability to stay on track and press forward (amongst the confusion and lack of direction), are just what the DERMAS doctor ordered. He has been positively instrumental in helping to connect a lot of the dots around this place, and he is to be commended…Although we are not through with him (!), I just wanted to take the time to thank you. It is a pleasure to work with Jim.*

GIS / ESRI Software / MapInfo

Not Applicable

Electronic Commerce / EDI

Genova has not had any direct EDI experience, but has researched it and worked with similar technologies.

Telecommunications Wide Area Network

Genova contracted to analyze and build a worldwide remote office network for Naval Exchange Services Command (NEXCOM). When Genova began working on the project in 1993, the 100+ NEXCOM facilities had no connectivity amongst themselves. This resulted in several

homegrown applications developed at each location. Many of the applications performed the same functionality, but were running on different platforms, written in multiple languages and accessing disparate databases. It was Genova's task to unify and integrate these systems.

The system delivers office productivity applications, email, and network file and print services to 3000 users around the world using 60 Solaris servers and 1500 PC workstations. This project required very careful planning due to the business requirement that all system administration had to be done by personnel stationed at the corporate headquarters; there would be no technical support at each remote site. A difficult technical hurdle resulted from the client's requirement to use Sun's NIS+. This meant that two Sun Sparc servers were required at each site, according to Sun's recommendation to eliminate risk of system unavailability caused by WAN outages. Genova's network integration experts worked with Sun Consulting to develop custom PC client management software and modified authentication code to eliminate this two-server requirement. In addition, Genova created customized tools to allow the core group of administrators at the corporate headquarters to manage the entire network. Reducing the number of servers at a site from two to one and providing a centralized management system with greater controls operated by just 10 employees ***generated cost savings of $1 Million the first year alone***. These reductions were accomplished by integrating COTS and custom software. The Genova innovations are now included in the Sun releases.

BioMetrics

Genova has done extensive research in the field of Biometrics, but has not had the opportunity to apply it either internally or for a client.

Wireless Networking

Genova developed a world-class application as part of an onboard information network, providing an international transportation customer with a unique system that provides in-flight wireless access to information onboard a server on the aircraft as well as information available on the Internet. Using this technology, airline customers can surf the Internet or check their email while in flight.

Crewmembers can also use the system to support applications that eliminate many of the paper forms required upon arrival and before departure. Using the system's wireless LAN, these applications exchange data between the aircraft and the airline's network at the airport, enabling the airline to save both time and money.

The Wireless LAN Manager (WLM) provides management and health monitoring of the wireless LAN hardware within the unique environment of the aircraft. WLM ensures that the wireless LAN is disabled during critical phases of flight. When the wireless LAN is enabled, WLM ensures that it is operating at a frequency legal in the country where the aircraft is currently located.

WLM is a complex software development effort that requires frequent communication with others involved in the development of the total system, to define the many external interfaces WLM is required to support. WLM supports the following external interfaces:

- SNMP communication with the wireless hardware
- Proprietary communication with the wireless hardware
- Interfaces to two CORBA service processes
- Interface to a discrete I/O driver
- Interface for secure communications to an avionics data controller unit

- SNMP communication with SNMP manager applications
- Interface to an Oracle database
- Interface to XML files for configuration data

Because of the many external interfaces, the application design was required to be multi-threaded to prevent delays in communication over the interfaces. Genova implemented several design patterns within the application to meet performance requirements and provide flexibility as external interfaces changes over the life of the program.

Initial development began with the use of a third party library to handle the direct communication with the wireless hardware. After some early testing, it was determined that the third party library could not support all the requirements. Genova developed a replacement library that required a detailed understanding of how to configure and communicate with the wireless hardware. The new library met all requirements, ***delivered a 10-fold increase in performance,*** and is estimated to ***save the customer approximately $2 million*** over the life of the program.

WLM was initially targeted to run only on the Windows operating system. Recent efforts have required a port to run on Linux. Due to up-front design considerations at the beginning of the project, porting the existing application to Linux was accomplished in approximately 6 weeks.

During development of the WLM application, Genova engineers provided the following efforts:

- Software requirements definition and documentation
- Complete software design of the application and some of the external interfaces with required design documentation
- Software development and coding
- Unit testing of all code
- Software acceptance test plan and procedures documentation
- Support for system integration with actual hardware both locally and in Toulouse, France.
- Installation and configuration support documentation

WLM is currently in production and has been installed on commercial aircraft.

This project highlights many of Genova's abilities to design and develop a complex, yet robust, software application and provide support throughout the project to make it a success.

IT STAFFING

Genova has a recruiting department that supplements the IT staffing needs of our customers locally and nationwide. Genova understands that hiring managers are already overwhelmed with other responsibilities and commitments and we are deeply committed to saving them time by submitting only highly qualified candidates. Our rigorous screening process has resulted in over 80% of candidates presented being made an offer.

Generally, one of the drawbacks of using supplemental staff to perform on projects is that when their assignment is over and they move on to their next assignment, the project knowledge goes with them. Genova mitigates this issue in two ways. First, whenever possible, Genova assigns a full-time permanent Genova employee to work with the supplemental staff so that Genova retains the knowledge base. Genova has an extremely high employee retention rate. Customers have contacted us years after the completion of a project and were able to speak to original project team members. The second way Genova helps prevent knowledge loss is by scheduling

a meeting with the departing contractor(s) for a project review prior to their departure. This extra effort helps our clients long after the project concludes.

Graphic / Web Design

Genova has developed several cutting edge web applications that include various functions including data gathering, reporting, and analysis over the web. In order to provide full support to our customers, security services include Internet Firewalls, Secure Web Servers, and Intranet and Extranet site development and clearly defined portal development applications that restrict access and privileges.

Other

Continuing Education System
Genova, in partnership with the University of Iowa, won a SBIR (Small Business Innovation Research) grant to develop a tool to address the problem of medical errors due to the omission of using guidelines.

Genova provided the technical abilities in database design, database administration, data load balancing, web server technology expertise, intuitive Graphic User Interface design, current off-the-shelf technologies, and networking expertise. The University of Iowa provided clinical medical consulting expertise and guidance during the design phase and crucial field-testing of the now patented WebCE tool.

WebCE allows the physician to gain access to new medical information and standardized medical practices while receiving CME credits during his/her clinic day. The Physician gains this information (and CME credit) in granules as small as one-two minutes. Physicians can even obtain more credits on a subject by requesting links to be sent to them at the end of the clinic day.

The Genova team worked with groups of physicians to determine their requirements, and then designed and built WebCE. Genova also worked with the AMA to insure that the new system would meet AMA CME guidelines.

Invitation to Qualify

Genova Technologies
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Cedar Rapids, Iowa 52411
www.genovatech.com

Contact
Ann Fleckenstein
Dir. Business Development
Phone 319-378-8455
Fax 319-378-8457
ann.fleckenstein@genovatech.com

Woman-Owned Small Business

DUNS
92-985-2820

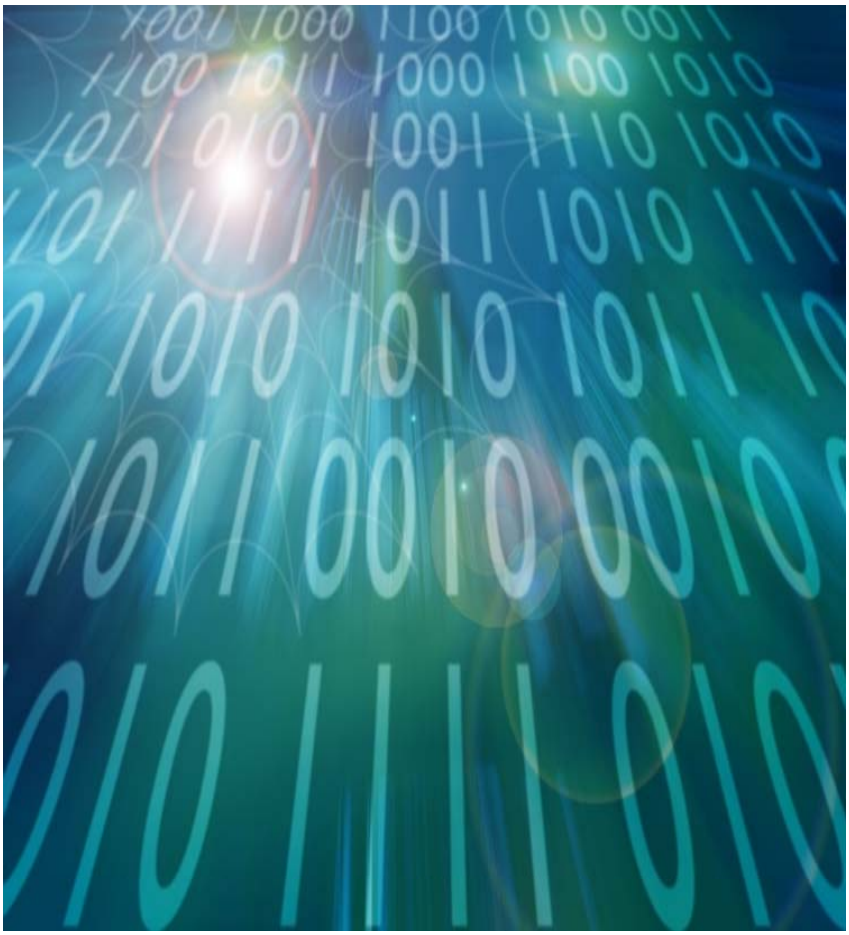
CMS BPA
HHSM-500-2005-00001B

GSA Schedule 70
GSA GS-35F-0303M

NAICS Codes
518210, 541511, 541512, 541519, 54171, 541330, 541611, 611420, 611430

RFP BD80200S102

Strategy / Vision / Consulting



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1. PROVIDING RESOURCES

How do you intend to provide the resources required by this ITQ?
Genova has a Resource Planning Team that is responsible for coordinating all resources for current and future projects. The committee meets at least once a week to discuss the progress on existing jobs as well as any potential projects for the future. The Committee utilizes Microsoft Project to organize and track the company's various projects and resources. With this process, Genova has the ability to plan for all projects and resource needs well in advance. This ensures that the company is able to meet all personnel requirements in a timely manner.

2. CONTRACT ADMINISTRATOR

Identify the SP contract administrator and describe the functions that person will perform.
Ann Fleckenstein will act as the contract administrator. Her contact information is as follows: Genova Technologies, 5250 North River Blvd NE, Cedar Rapids, Iowa 52411; (319) 378-8455; ann.fleckenstein@genovatech.com

The contract administrator (CA) will be responsible for the overall performance of the contract in accordance with contractual requirements as well as Genova company policies. The CA will have full responsibility and authority in all areas necessary for the accomplishment of the mission and will be the primary point of contact for business negotiations.

The CA will transition each project over to a Project Manager (PM) who will become the primary point of contact for the technical aspects of the project. The PM will direct staff in areas of cost, schedule, technical performance, impact analysis, software quality assurance, management, project controls, and project administration. Inherent responsibilities include providing and submitting all plans, records, reports, and data to the customer in accordance with Genova policies and contractual requirements. The CA and PM will maintain liaison with State officials regarding the operational and contractual aspects of the project.

3. PROVIDING ADDITIONAL PERSONNEL

Describe how you plan on providing additional personnel if it becomes necessary to properly staff projects.
As discussed in question 1, Genova has a Resource Planning Team that meets regularly coordinate current and future resource needs.

In addition, Genova has an internal Recruiting Department that works closely with Genova's Resource Planning Team to anticipate vacancies and surge requirements in sufficient time to identify replacement or supplemental candidates.

Another approach Genova uses is to partner with organizations and companies that can provide extensive experience or additional personnel that would be a "fit" for the project. While these companies may compete with Genova in some areas, there can be significant benefits to working together as a team. We refer to this relationship as "co-peting". By forming these partnerships, Genova provides our customers with the best possible team to perform the work.

4. ABILITY TO ADDRESS ISSUES

Describe your company's ability to uniquely address problems and issues related to the service category.

Genova's premier differentiator is the ability to quickly and thoroughly document all system and project requirements with its proprietary technique. Genova is able to track each requirement from analysis, to design, development, testing, and documentation. As new requirements or risks are uncovered, their impact to the schedule and/or budget is discussed with the customer. An adaptive lifecycle approach enables Genova to make the necessary adjustments throughout development, resulting in a final project that exactly suits the customer's needs and adheres to both schedule and cost.

As a small business, Genova takes a personal interest in the success of its customers' projects that often larger organizations can not replicate. Genova's references show that Genova consistently provides a high level of responsiveness, reliability, and flexibility. Genova utilizes project management techniques and methodologies adapted from industry standards and best-practices such as the Project Management Institute' *Body of Knowledge*.

Genova is committed to maintaining effective, consistent communication with the customer throughout all stages of the project. Genova uses a variety of methods to keeping the client involved. Genova submits status reports at regular intervals. Frequent meetings are scheduled to review progress, plan strategies, or mitigate risks. In addition, there are phone calls, emails, and secure access to project information online. Genova has a virtual private network (VPN) solution in place to provide the project team access to project information from the office, home, or while traveling. Genova is also implementing an Enterprise Project Management solution that will allow customers to view project information online 24 hours a day.

STRATEGY / VISION / CONSULTING

Genova's approach to strategy or vision consulting combines industry standards with user, system, and organizational requirements to produce policies and plans that are practical and reasonable. In general, the methodology we employ for this type of work is:

- Identify the problem requiring a policy and plan;
- Investigate industry standards for solving the problem;
- Investigate the tools/infrastructure, enterprise architecture standards, and budget available for solving the problem;
- Investigate requirements unique to the institution and user community;
- Blend the results from the previous steps into usable policies and plans.

Genova uses this methodology to assist its customers in attaining their business goals by maximizing their existing resources and developing a plan for growth.

5. ADOPTING CLIENT POLICIES

Describe your company's practices in adopting client policies and methods.
When beginning a project, Genova requests a copy of the customer's relevant coding standards and any document templates that will be utilized. When the Project Manager sees a value departing from the standard, the issue is discussed with the client. The Project Manager is also responsible for ensuring that the client's quality control and security standards are followed.

Genova has developed a Quality Assurance Manual that includes coding standards, project management methodologies, and other quality procedures. Genova will employ its own policies whenever clients do not have their own in place. If the two policies are in conflict, Genova will defer to the client's policies, unless a real value is gained by veering away from the policy. In this situation, Genova would discuss the advantages of altering the policy with the client and allow the client to make an informed decision regarding which policy to adhere to.

6. OPERATING & COMMUNICATION SYSTEM EXPERIENCE

List each type / brand of operating system/ communication system you are experienced with in each category below and make comments.

System	Experience	Independent Performance	Ability to Teach
Mainframe	Limited	Yes	No
Midrange / Minicomputer	Sun Solaris – Decades of combined experience. Ulta 1, 250, 450 class	Yes	Yes
Client / Server / Distributed Systems	Windows, Unix, Linux, NT	Yes	Yes
Desktop	Windows 9x/NT/2000, Linux, Solaris, ME	Yes	Yes
LAN	Solaris, Microsoft, Novell, NT, 2000, Linux Naming services – DNS, NIS, NIS+, NDS and small amount of LDAP.	Yes	Yes
Languages and DBMS	C++, Visual C++, Borland C++ Builder, C, C#, Java, Ada, ASP.Net, ASP, VB, HTML, XML, Cold Fusion, Crystal Reports, CORBA, COM/DCOM, Portal/Internet Development,	Yes	Yes
Model Based Development	MATLAB/Simulink	Yes	Yes

7. DATABASE EXPERIENCE

Describe your products / experience with Databases.

Product	Experience	Independent Performance	Ability to Teach
Administration	Oracle Certified, SQL Server Certified, Microsoft Access, and ODBC client connections	Yes	Yes
Application Development Tools	Used many languages to create client and web applications tied to databases, SQLAPI with C++ and native Oracle	Yes	Yes
End User Tools	WebCE, Timecard,	Yes	Yes
Structure & Methodologies	UML, N-Tier, EA,	Yes	
Other	SQL statements; ODBC, JDBC.	Yes	Yes

Additional Information

Our company has over 10 years of experience with database design and development with various databases including Microsoft Access, Oracle, Microsoft SQL Server, Progress, DB2, and IDMS.

Our Database administrators are certified in Oracle and Microsoft SQL server 7.0 and 2000. The figure below shows some of the database expertise and services available from Genova.

Database Administration

These types of services would likely be needed by companies that have don't have a full time DBA on staff.

1) **Database set up**
   a) Check for adequate redundancy of control files and redo logs
   b) Proper sizing of roll-back segments and data files
   c) Check for file contention
   d) File striping
2) **Back up**
   a) Review backup/ recovery strategy
   b) OS Scripts for shut-down/backup/startup
   c) Archive redo logs
3) **File Reorganization**
   a) Tables
   b) Indexes
4) **Users**
   a) Password maintenance
   b) Privilege/Role/Profile maintenance
5) **Alert Files**
   a) Check/clean up Alert and Trace files

Database Tuning

These types of services are much more time intensive. Hence, even when a DBA is on staff, they may not have the opportunity to work through the testing required. They are listed in order of diminishing return.

1) **Operating System**
   a) CPU Usage
   b) Memory Usage
2) **System Global Area**
   a) Check sizing of SGA, Shared Pool, Data Dictionary Cache and Library Cache
   b) Tune Buffer cache
   c) Tune Redo Log buffer
3) **I/O**
   a) Tune Checkpoints
   b) Tune background processes
   c) Reallocate/ Reorganize table-spaces
   d) Tune Sort area and Temporary table-space
   e) Tune Rollback segments
4) **Locks and Latches**
   a) Check for contention

Application Tuning

These types of services are much more time intensive. Hence, even when a DBA is on staff, they may not have the opportunity to work through the testing required. This could be done before an application went into production or, assuming the source was available, could be part of an ongoing tuning process. The most effective tuning is done here.

1) **SQL Statements**
   a) Test and recommend changes to application SQL statements
   b) Write packages that may could replace code based SQL calls
   c) Pin packages in memory.
2) **Indexes**
   a) Select most efficient index for application

All of these services assume a single server implementation. Partitioned and possibly multithreaded servers may require special consideration.

ORACLE | PARTNER PROGRAM

8. SOFTWARE EXPERIENCE

What general software applications have you experience in?
Genova's staff averages 15 years industry experience. Genova has created custom software solutions for clients in banking, medical, transportation, communication, and government industries. Genova's unique approach has saved customers millions of dollars.

Application Development
Application development includes multi-tiered, client/server, and web services applications across diverse environments including Windows, Linux, Unix, and embedded operating systems. Genova has extensive experience in leading databases and programming languages. To better server our clients, Genova is committed to staying current with emerging trends and technologies.

Network Design and Remote Management
Genova has developed several WAN and LAN implementations. Networking connections included traditional LAN and WAN protocols as well as wireless and satellite transmissions. Genova also provides remote management over a virtual private network (VPN). This has proven to be the most cost effective solution for our clients that need technical assistance for undetermined times, upon their request.

System Integration
Genova designed, developed, and implemented a worldwide system integration effort that involved a multi-vendor legacy platform environment. This was a global application and installation that included customization of Commercial Off the Shelf (COTS) software. After the successful deployment of the application, Genova has been retained on a consulting services basis to provide support as needed for over eight years.

Web-Based Application Development
Genova has developed several cutting edge web applications that include various functions including data gathering, reporting, and analysis over the web. In order to provide full support to our customers, security services includes Internet Firewalls, Secure Web Servers, Intranet and Extranet site development and clearly defined portal development applications that restrict access and privileges.

9. OTHER EXPERIENCE

Please describe any experience and deployed solutions in each of the following specific technologies below.

Item	Experience	Independent Performance	Ability to Teach
a) Help desk solutions / technologies	See detailed experience below	Yes	Yes
b) Data development	See detailed experience below	Yes	Yes
c) Data modeling	See detailed experience below	Yes	
d) Facilitating and consulting	See detailed experience below	Yes	Yes
e) Photogrametery and remote sensing	See detailed experience below	NA	NA
f) Data collection and clean up mapping	See detailed experience below	Yes	Yes
g) GIS / ESRI Software / Mapinfo	NA	NA	NA
h) Electronic Commerce / EDI	NA	NA	NA
i) Document management	NA	NA	NA
j) Telecommunications wide area network	See detailed experience below	Yes	Yes
k) Biometrics	NA	NA	NA
l) Wireless networking	See detailed experience below	Yes	Yes
m) IT staffing	See detailed experience below	Yes	Yes
n) Graphic / web design	See detailed experience below	Yes	Yes
o) Other	See detailed experience below	Yes	Yes

HELP DESK SOLUTIONS / TECHNOLOGIES

Genova assisted a group within the Department of Defense (DoD) with policies and plans for deploying their IT help desk. This group had distributed, regional help desks, but had been mandated to consolidate and form a centralized help desk at headquarters. This problem required new IT policies and plans. Next, Genova examined help desk industry standards, and the tools and infrastructure available to DoD to solve this problem. One of the leading industry standards for managing a help desk is called ITIL – IT Infrastructure Library. It covers much more than help desk, but is a good basis for developing many infrastructure standards. DoD's help desk system was Remedy™, which is based on ITIL standards. Since the help desk system was in alignment with a proven industry standard, Genova began aligning policies and plans to meet standards. Genova also needed to modify the standards to fit the DoD and its user community. Finally, DoD did not have funding to purchase all of the functionality available in Remedy; therefore, Genova assisted with modification of their policies and plans to fit that subset of functionality. Genova also wrote software to communicate between disparate help desk technologies across the Internet.

DATA DEVELOPMENT

This project highlights Genova's ability to work closely with technology partners in all phases of a project from concept to full integration and testing.

The Advantaged Node Technology (ANT) project is a component of the Multifunctional On the Move Secure Adaptive Integrated Communication (MOSAIC) Advanced Technology Demonstration (ATD) program. The goal of the MOSAIC program was to develop and demonstrate a suite of protocols for providing end-to-end communication services across mobile ad-hoc military networks with assured throughput, latency, and dependable delivery. In particular, this advantaged node technology utilized the enhanced visibility of elevated nodes (or nodes connected to other networks) in a manner that increases the overall capabilities of the network.

Key concepts of the Advantaged Node Technology are:

- Avoiding congestion in nodes that have significantly better connectivity to the members of a target sub network, than does the average node -- for example airborne nodes. Congestion may typically happen in such nodes, because all shortest path routes would tend to flow through this highly connected node. The Advantaged Node Protocols attempt to alleviate this congestion by discovering and manipulating the connectivity at layer 2 in order to create a network topology at layer 3 that only routes certain classes of service through the advantaged nodes.
- Avoiding routing instabilities in nodes with an advantaged position but have dynamic or intermittent connectivity, for example a low moving helicopter. This type of node is considered a disadvantaged node.
- And, taking advantage of nodes with links to additional sub networks, which may offer, for example, long-range one-hop, communications to a similar node in a distant part of the original sub network.

The work on this program started with using the ANT concept and defining the requirements for the software. Work progressed through the software design, modeling, and development. After successful testing and demonstration in the lab environment, the software was ported to a military communications radio. The radios were placed in vehicles in a field test environment

and the technology was successfully demonstrated to potential end users. This technology is intended to play a key role in the communications infrastructure of advanced military radios of the future.

During the program, Genova engineers provided the following services:

- Assist with requirements definition
- Design of the communications software and routing protocol implementation
- Development and coding of the communications software
- Support for execution of the developed code in modeling software packages
- Design the interfaces to allow the software to be installed and configured on the target radios
- Testing within the development lab
- Work with radio hardware engineers to install and configure the software on target radios
- Support for both lab and field demonstrations.

Genova engineers worked closely with Rockwell Collins engineers throughout this project to support the development and, in particular, the integration of the new communications software onto the target radios.

DATA MODELING

Genova has certified database administrators on staff. We have Oracle Certified and Microsoft Certified Application professionals on staff. Collectively, they have over 40 year's industry experience. Following are highlights of projects they have worked on while at Genova:

Iowa DNR
This tool tracks the effluent and influent flow of chemicals deposited into water areas. The program is designed to generate permits for facilities that are requesting to dump pollutants into the water and then tracks the mandatory reports submitted by companies to ensure compliance with environmental regulations.

- Modeled a pollution discharge measurement system in SQL Server that included an XML export to the EPA database.
- Data modeling to convert an IDMS mainframe database to Microsoft SQL Server
- Data modeling to make necessary change to the Microsoft SQL Sever database to Configure it for One Stop Initiative

Siemens
Genova enhanced an existing application to dispatch and track Freeway Service Patrol and Traffic Management Teams. The Freeway Service Patrol consists of tow trucks that are contracted during rush hour traffic to provide assistance to motorists. This assistance can come in the form of a gallon of gas, towing of the vehicle, to transporting of occupants of the vehicle to ensure traffic congestion is minimized. Traffic Management Team vehicles also aid motorists by raising a sign on their trucks to inform motorists that they are approaching a potential traffic incident. These incidents can range from lane closures to detours.

The existing application was used for one-way assignment of incidents from the dispatcher to the vehicles for Police, Fire, and Ambulance. The new development consists of new incident types and the ability of a vehicle operator that discovers an incident to assign himself to that incident while keeping Supervisor vehicles and Dispatch informed of the incidents, their progress, and locations. The vehicles are tracked on an on-screen map and the incident status

is tracked and updated on a separate screen as they respond, arrive at the scene, or complete the incident.

Some of the tasks Genova assisted with are:

- Remapped the data model for a SQL Server database to Oracle converting all entities including tables, views, stored procedures
- Created SQL Server data model for traffic assistance package that modeled support vehicle locations, accidents, and traffic flow incidents.
- Designed to Siemens' database design standards.

Rockwell

Genova developed a common tool to compile assumptions for marketing and sales of aircraft for their Commercial Systems. This new tool was to take six long-term sales and forecast processes and methods across six different business units and consolidate them into one process to support the forecast and variety of requests from managers.

Specific tasks performed by Genova included:

- Provide a common tool to compile Rockwell's assumptions for Market & Sales forecasting for aircraft across six divisions.
- Perform analysis between using SQL Server vs. Microsoft Access
- Allows analysis across the Commercial Service Business
- To Convert 6 Microsoft Excel spreadsheets from six divisions into one process using Microsoft Access.
- Allow import of information from other database's and Microsoft Excel spread sheets
- Allow Data entry of information
- Create reports in Microsoft Excel
  - *Allowed the users to do "what if" scenarios without changing the forecast data.*
  - *Allowed the user to do ad hoc reporting from the information dumped to Microsoft Excel.*

Union Pacific Railroad

Genova created this database driven application allowing locomotives to wirelessly report their location and locomotive health. The application's responsibility was to capture this data, store it in the database, and display to dispatchers any potential mechanical problems that the locomotive was reporting. The goal of the system was to be able to know about mechanical problems before the locomotive came into the depot, so that the necessary parts could be waiting.

The Genova team designed and implemented the Oracle database for storing health information on the various systems installed on a locomotive. This included designing and documenting the Entity Relationship Diagram, Data Dictionary, and DML script. Genova was also responsible for installing the Oracle 7 database server for client. Client tools utilized Visual Basic and ODBC to access the database tables. The database was critical to the success of the project, because much of the data had several inter-dependencies and unknowns. Union Pacific was so impressed with the database design and implementation, that they copied it for some of their other systems (i.e. railroad cars), to do similar applications.

General

Learning and Training Strategic Consulting

Our experienced teams are dedicated to assisting you in analyzing and clarifying business objectives, resulting in successful custom solutions. Every custom solution begins with defining and understanding the audience, available instructional technology (LMS/LCMS), standards (SCORM and 508 compliance) company culture, initiatives, and desired results.

Training Content Development Conversion
Transforming a storyboard, script, or manual into e-learning modules involves more than a simple cut-and-paste process. Off-the-shelf e-learning authoring tools can provide limited interaction and customization. With our custom development solution, a team of developers transforms your content from static text into engaging learning objects, enhancing knowledge transfer resulting in greater retention. We have SCORM and 508 compliancy expertise. *We can convert:*

- PPT, Word or Excel to a web-based module or modules (deployed on our LMS or yours)
- Authorware modules to a web-based module or modules
- Toolbook to a web-based module or modules (deployed on our LMS or yours)
- Video presentations (VHS) to a web-based module or modules (deployed on our LMS or yours)

Training Content Conversion
With our content conversion and development solution, a team of developers can transform your manuals or existing classroom-based training materials. We can supplement your training materials by converting only those pieces/modules that are able to be delivered over Internet.

Our solution is custom and we focus on making sound instructional decisions when converting existing training materials. For example, we do not suggest converting ALL of your classroom-based training materials simply for the sake of putting training on the Internet. We have SCORM and 508 compliancy expertise. *We can convert:*

- Once we analyze your content, audience and delivery goals,
- Testing or quizzes for delivery on the Internet (with custom reporting)
- PPT, Word or Excel to compliment your classroom-based materials
- Video presentations (VHS) to a web-based delivery mode

FACILITATING AND CONSULTING

Genova teaches a requirements analysis and adaptive software development training course, entitled “Managing Projects in ‘Internet Time’”. This training focuses on how to create a productive, satisfying work environment while managing a project from the initial requirements capture phase through to final testing and delivery. The training is divided into four major topic areas. The first area focuses on how to start a project right by kicking off planning the project, defining the mission of the project, and how to execute the initial requirements analysis phase.

The second area then focuses on an in depth requirements capture, development, and analysis methodology. This methodology also can prove completeness of the requirements. This is the most detailed part of the course.

The third section of the course then deals with how to manage a project using the software adaptive lifecycle development process. The waterfall development process has been the standard for several decades. This process works well when all of the requirements are known up front, and the requirements do not change. For most modern projects, the waterfall process does not work well because the users do not know all of the requirements up front, and may

actually change during the software development process. This is where the adaptive lifecycle development process shines. This methodology is iterative, and allows the development team to make “course corrections” to requirements and design during the development process; thereby producing a product that the customer wants and needs while staying within budget and schedule.

The last section of the course is entitled “Teamicide: How to Kill Otherwise Happy, Productive People and Projects.” This part of the course focuses on the results of a twenty-year study that showed that most IT projects fail due to politics, not technology. The study found that for each failure, there was always a technological solution; the failure was due to politics such as hidden agendas/motives, disenchantment with a customer, unclear requirements, etc. This part of the course focuses on how to avoid political problems with cause “teamicide” and to help projects be successful while also providing a fun, productive work environment for the team.

PHOTOGRAMETERY AND REMOTE SENSING

Not Applicable.

DATA COLLECTION

Timecard Tracking System
Genova designed and implemented an Oracle database for time card record keeping. This included designing and documenting the Entity Relationship Diagram, Data Dictionary, and DML script. Genova was also responsible for installing the Oracle 8 database server. Client tools utilized Visual Basic and Oracle Objects for OLE to access the database tables. This project involved migrating data and code from SQL Server to Oracle to MySQL.

Repair Tracking System
Genova designed and implemented an Oracle database for tracking repair data performed on aircraft systems. This included designing and documenting the Entity Relationship Diagram, Data Dictionary, and DML script. Client tools utilized Visual Basic and Oracle Objects for OLE to access the database tables.
Genova assisted The National Cancer Institute and the University of Iowa (from now on, referred to as just “NCI”) with the development of an application for their abstractors to gather cancer data. Abstractors go from hospital to hospital collecting data from cancer cases so that NCI can perform statistical analysis on the data. NCI had two major problems with their existing tool. First, it had several bugs that were slowing down the abstractors so that they were collecting less data. Secondly, NCI had a requirement to be able to gather quickly new information in accordance with the College of Surgeons guidelines. For example, if the College of Surgeons wants data collected on cancer patients who live within fifty miles of a nuclear plant, the tool needed to be quickly adaptable to gather this new information. NCI’s existing tool was not quickly adaptable, and the company owning the tool would take months to respond to new requirements.

National Cancer Institute
This project was on a tight schedule, since the budget for development was the budget allocated to buy the license for the existing tool for the following year. Therefore, if Genova did not finish the project on time, NCI would be in a bind, because the money to buy licenses for the existing tool would have been spent on development and NCI would be left with no abstracting tool. NCI hired Genova to gather, develop, and analyze the requirements of the tool, then to develop, test, and deploy the new tool. Genova met with the NCI staff and investigated the existing tool to document the initial requirements.

The abstractors needed to have a tool that would present to them different data fields to allow them to answer different questions as the College of Surgeon special studies dictated. To fulfill this requirement, Genova used a new technology (XML) in a new, unproven way. Genova identified this high-risk requirement early in the development process and began designing for it. The adaptive lifecycle development process methodology requires high-risk requirements to show an early proof-of-concept so that the risk can be mitigated early. This is what Genova did. Genova showed a successful proof-of-concept of this high-risk requirement during the first 4-6 week cycle that helped set the course for the rest of the project.

The NCI Abstracting tool was finished on-time, in-budget, with complete documentation showing the traceability of requirements from the initial requirements capture documents, through to the design documents, into the code, and finally into the test plan and procedures. The abstractors commented that they were able to complete 50% more abstracts with the new tool and that they were very satisfied.

Chicago Maps ActiveX Tools Document Management
This project demonstrates Genova's ability to deliver requirements engineering services, including requirements capture, development, analysis, and management. This project also demonstrates that Genova's requirements methodology is useful for not only projects to be developed, but also for the purchase of COTS (commercial-off-the-shelf) software.

The Defense Commissary Agency (DeCA) had funding to purchase a Records and Documents Management System. A DeCA resource assigned to gathering the requirements to produce the RFP was tasked with maintaining the existing, antiquated records and documents management system. Due to multiple problems in the existing system, the DeCA employee had fallen far behind schedule in developing the requirements for the new system. He was so far behind, that DeCA was faced with the prospect of losing their funding if the RFP and its responses could not be completed in a timely manner.

DeCA asked Genova to help them quickly develop solid requirements for their new records and documents management system. The Genova team worked with the DeCA staff and DeCA users to develop the requirements. This project was also "politically charged" because records and documents management crossed many domains, and each user domain had strong opinions on how the new system should work. The Genova team not only quickly developed the requirements, but also successfully navigated the political minefield, as stated by an email from the DERMAS Project Manager:

> *As discussed today on the phone, I cannot tell you how valuable Jim has been to the DERMAS effort. I do not know if anyone can save this ship, but Jim sure has been terrific since Day One, coming into a seemingly hopeless situation. His determination, skills, ethics, professionalism, manners (believe me, these came in terribly handy), and ability to stay on track and press forward (amongst the confusion and lack of direction), are just what the DERMAS doctor ordered. He has been positively instrumental in helping to connect a lot of the dots around this place, and he is to be commended…Although we are not through with him (!), I just wanted to take the time to thank you. It is a pleasure to work with Jim.*

GIS / ESRI Software / MapInfo

Not Applicable

Electronic Commerce / EDI

Genova has not had any direct EDI experience, but has researched it and worked with similar technologies.

Telecommunications Wide Area Network

Genova contracted to analyze and build a worldwide remote office network for Naval Exchange Services Command (NEXCOM). When Genova began working on the project in 1993, the 100+ NEXCOM facilities had no connectivity amongst themselves. This resulted in several homegrown applications developed at each location. Many of the applications performed the same functionality, but were running on different platforms, written in multiple languages and accessing disparate databases. It was Genova's task to unify and integrate these systems.

The system delivers office productivity applications, email, and network file and print services to 3000 users around the world using 60 Solaris servers and 1500 PC workstations. This project required very careful planning due to the business requirement that all system administration had to be done by personnel stationed at the corporate headquarters; there would be no technical support at each remote site. A difficult technical hurdle resulted from the client's requirement to use Sun's NIS+. This meant that two Sun Sparc servers were required at each site, according to Sun's recommendation to eliminate risk of system unavailability caused by WAN outages. Genova's network integration experts worked with Sun Consulting to develop custom PC client management software and modified authentication code to eliminate this two-server requirement. In addition, Genova created customized tools to allow the core group of administrators at the corporate headquarters to manage the entire network. Reducing the number of servers at a site from two to one and providing a centralized management system with greater controls operated by just 10 employees ***generated cost savings of $1 Million the first year alone***. These reductions were accomplished by integrating COTS and custom software. The Genova innovations are now included in the Sun releases.

BioMetrics

Genova has done extensive research in the field of Biometrics, but has not had the opportunity to apply it either internally or for a client.

Wireless Networking

Genova developed a world-class application as part of an onboard information network, providing an international transportation customer with a unique system that provides in-flight wireless access to information onboard a server on the aircraft as well as information available on the Internet. Using this technology, airline customers can surf the Internet or check their email while in flight.

Crewmembers can also use the system to support applications that eliminate many of the paper forms required upon arrival and before departure. Using the system's wireless LAN, these applications exchange data between the aircraft and the airline's network at the airport, enabling the airline to save both time and money.

The Wireless LAN Manager (WLM) provides management and health monitoring of the wireless LAN hardware within the unique environment of the aircraft. WLM ensures that the wireless LAN is disabled during critical phases of flight. When the wireless LAN is enabled, WLM ensures that it is operating at a frequency legal in the country where the aircraft is currently located.

WLM is a complex software development effort that requires frequent communication with others involved in the development of the total system, to define the many external interfaces WLM is required to support. WLM supports the following external interfaces:

- SNMP communication with the wireless hardware
- Proprietary communication with the wireless hardware
- Interfaces to two CORBA service processes
- Interface to a discrete I/O driver
- Interface for secure communications to an avionics data controller unit
- SNMP communication with SNMP manager applications
- Interface to an Oracle database
- Interface to XML files for configuration data

Because of the many external interfaces, the application design was required to be multi-threaded to prevent delays in communication over the interfaces. Genova implemented several design patterns within the application to meet performance requirements and provide flexibility as external interfaces changes over the life of the program.

Initial development began with the use of a third party library to handle the direct communication with the wireless hardware. After some early testing, it was determined that the third party library could not support all the requirements. Genova developed a replacement library that required a detailed understanding of how to configure and communicate with the wireless hardware. The new library met all requirements, ***delivered a 10-fold increase in performance,*** and is estimated to ***save the customer approximately $2 million*** over the life of the program.

WLM was initially targeted to run only on the Windows operating system. Recent efforts have required a port to run on Linux. Due to up-front design considerations at the beginning of the project, porting the existing application to Linux was accomplished in approximately 6 weeks.

During development of the WLM application, Genova engineers provided the following efforts:

- Software requirements definition and documentation
- Complete software design of the application and some of the external interfaces with required design documentation
- Software development and coding
- Unit testing of all code
- Software acceptance test plan and procedures documentation
- Support for system integration with actual hardware both locally and in Toulouse, France.
- Installation and configuration support documentation

WLM is currently in production and has been installed on commercial aircraft.

This project highlights many of Genova's abilities to design and develop a complex, yet robust, software application and provide support throughout the project to make it a success.

IT STAFFING

Genova has a recruiting department that supplements the IT staffing needs of our customers locally and nationwide. Genova understands that hiring managers are already overwhelmed with other responsibilities and commitments and we are deeply committed to saving them time

by submitting only highly qualified candidates. Our rigorous screening process has resulted in over 80% of candidates presented being made an offer.

Generally, one of the drawbacks of using supplemental staff to perform on projects is that when their assignment is over and they move on to their next assignment, the project knowledge goes with them. Genova mitigates this issue in two ways. First, whenever possible, Genova assigns a full-time permanent Genova employee to work with the supplemental staff so that Genova retains the knowledge base. Genova has an extremely high employee retention rate. Customers have contacted us years after the completion of a project and were able to speak to original project team members. The second way Genova helps prevent knowledge loss is by scheduling a meeting with the departing contractor(s) for a project review prior to their departure. This extra effort helps our clients long after the project concludes.

Graphic / Web Design

Genova has developed several cutting edge web applications that include various functions including data gathering, reporting, and analysis over the web. In order to provide full support to our customers, security services include Internet Firewalls, Secure Web Servers, and Intranet and Extranet site development and clearly defined portal development applications that restrict access and privileges.

Other

Continuing Education System
Genova, in partnership with the University of Iowa, won a SBIR (Small Business Innovation Research) grant to develop a tool to address the problem of medical errors due to the omission of using guidelines.

Genova provided the technical abilities in database design, database administration, data load balancing, web server technology expertise, intuitive Graphic User Interface design, current off-the-shelf technologies, and networking expertise. The University of Iowa provided clinical medical consulting expertise and guidance during the design phase and crucial field-testing of the now patented WebCE tool.

WebCE allows the physician to gain access to new medical information and standardized medical practices while receiving CME credits during his/her clinic day. The Physician gains this information (and CME credit) in granules as small as one-two minutes. Physicians can even obtain more credits on a subject by requesting links to be sent to them at the end of the clinic day.

The Genova team worked with groups of physicians to determine their requirements, and then designed and built WebCE. Genova also worked with the AMA to insure that the new system would meet AMA CME guidelines.

Invitation to Qualify

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Contact
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Woman-Owned Small Business

DUNS
92-985-2820

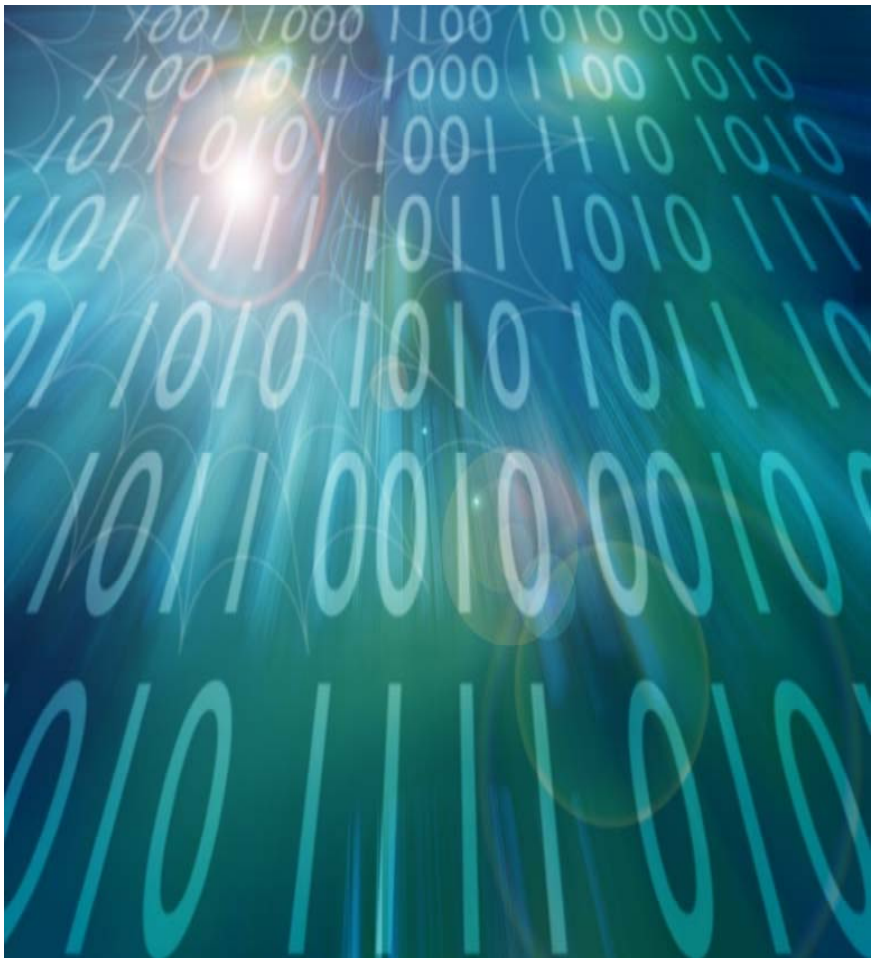
CMS BPA
HHSM-500-2005-00001B

GSA Schedule 70
GSA GS-35F-0303M

NAICS Codes
518210, 541511, 541512, 541519, 54171, 541330, 541611, 611420, 611430

RFP BD80200S102

General Contract Information



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EXECUTIVE SUMMARY

DEDE, Inc., doing business as Genova Technologies (Genova), is pleased to submit this proposal in response to the request for proposal (RFP) to perform Information Technology Consulting Services & IT Supplemental Staffing under RFP # BD80200S102 for the State of Iowa. We have carefully reviewed all requirements of the RFP and are presenting this proposal under the following Categories:

1. Strategy/Vision/Consulting
2. Project Management
3. Design/Planning
4. Developing
5. Testing
6. Implementation
7. Training
8. On-Going Support
9. Administration

Genova's focus is on being "responsive and reliable" and providing outstanding customer service to ***every*** customer, ***every*** time. Genova offers the State the following:

- An Iowa based woman-owned small business.
- Current core staff with unparalleled expertise in systems, software development, integration and project management to support the State's IT initiatives.
- A successful performance record supporting the State of Iowa Department of Natural Resources as well as other Federal and commercial customers.
- Proven, repeatable, and proprietary requirements gathering and software development methodologies and processes, based on industry best practices that ***deliver projects on time and on budget***.
- Innovative, customized solutions that work.
- Internal recruiting department to supplement the State's staffing requirements.

Founded in 1993, Genova has built a strong technical staff with industry experience averaging 15 years. One of our first clients is still our customer more than a decade later. This patronage is possible due to Genova's engineering development methodology which consistently delivers projects on time and on budget. Additionally, Genova strives to protect our clients' investment by retaining their knowledge base through our solid employee retention ratio. Genova's project managers oversee projects ranging in length from a few months to several years.

Genova specializes in project solutions, project management, custom software development, requirements gathering and analysis, and IT consulting on a contract basis nationwide. Genova provides specialized support to the government, communications, and avionics industries, as well as commercial clients. As a primary systems and software information technology service provider, Genova is responsible for systems engineering, design, integration, deployment and training, as well as operations. Genova has provided leading-edge solutions to its customers, and has reference letters confirming our reputation for providing integrity, value and innovation.

A few of Genova's core competencies include:

Requirements Gathering

Genova’s Requirements Gathering division uses our proven requirements gathering methodology to make sure your project begins correctly. Genova has a team dedicated to gathering and documenting project requirements in an efficient, productive manner. Our methodology will provide you with end-to-end tracking of project requirements from inception through implementation and final testing.

Networking

Genova's Networking group has extensive expertise in UNIX networking, NT networking, wireless networking, virtual private networks (VPN) and integrating disparate networks. These teams have also built commercial applications on Linux. Finding qualified networking teams is difficult and costly. Genova can support your network remotely, providing you with a cost-effective, only-as-needed-solution to help you fulfill network needs

Application Development

Genova's Custom Application Development team has specialists in several development languages for n-tier and Web applications. These languages include Java, JavaScript, C++, C#, .NET, ASP, XML, VB.NET, and Cold Fusion to name a few. Our development teams can provide you with letters of reference as to the quality of the work, and letters on how they were able to save current customers substantial amounts of money by finding existing products, and enhancing these products with custom code.

Database

Genova's Database team has extensive experience in Oracle, SQL Server, Access, among others. Genova’s certified Oracle DBA staff and SQL Server staff can also help with project work or remote support. Genova can also provide you with letters of reference as to our database design expertise.

Supplemental Staffing

If the State requires a highly specialized skill set, or additional staffing is needed, Genova’s Recruiting Department can identify highly qualified candidates to perform the work. Genova has an extensive pool of candidates and can fulfill most supplemental staffing requests quickly.

PROPOSED CATEGORIES AND CONSULTING SERVICES

Category	Description
Strategy/Vision/Consulting	
Architect	Brings the vision and planning to integrate the enterprise's IT systems to operate as a cohesive, standardized unit versus disparate stovepipe systems.
Subject Matter Expert	Brings a deep expertise in a specific technology or business area.
Business Consultant/Analyst	Brings the ability to analyze and recommend business process improvements and re-engineering.
Project Management	
Program Manager	Manages multiple projects at once both related and unrelated in nature and scope.
Project Manager	Manages a specific project or aspect of a project on larger projects.
Project Administrator	Assists with the administration of the project management activities.
Technical Writer	A writer with skills in a specific technical arena and the ability to write technical information to be consumed by an end-user community.
Design/Planning	
Architect / Technology Lead	Responsible for the design and technical specification of a business solution or a specific aspect of a business solution on larger projects.
(see Developers Section)	
Developing	
Developer	Builds solution components based on technical specifications.
Sr. Developer	Builds solution components based on technical specifications. Extensive experience.
Jr. Developer	Builds solution components based on technical specifications. Limited experience.
Engineer	Builds infrastructure solutions based on technical specifications.
Sr. Engineer	Builds infrastructure solutions based on technical specifications. Extensive experience.
Jr. Engineer	Builds infrastructure solutions based on technical specifications. Limited experience.
Emerging/Niche Technology	Builds solutions based on technical specifications using emerging or niche technologies.
Sr. Emerging/Niche Technology	Builds solutions based on technical specifications using emerging or niche technologies. Extensive experience.
Jr. Emerging/Niche Technology	Builds solutions based on technical specifications using emerging or niche technologies. Limited experience.
Testing	
Test Planning	Analyzes business requirements and technical specifications to determine and build a test plan.
Quality Assurance	Builds and executes test scripts based on a test plan. Tracks and coordinates issue resolution.
Implementation	
Implementation Planning	Analyzes business requirements, technical specifications and end-user community requirements to determine and

Category	Description
	build an implementation plan
(see Developers section)	
Training	
Product Building	Build a training product.
Classroom Delivery	Deliver a training product in a classroom setting.
Online / CBT	Build a training product specifically for online and computer based training.
Field Delivery	Deliver a training product at the customer's location.
On-Going Support	
Help Desk Support	Provide required technical support via phone.
On-Site Support	Provide required technical support working at the customer's site.
On-Call Support	Provide required technical support on an as needed basis, normally associated with a service level agreement.
Administration	
Database	Perform database administration activities on the selected database.
LAN/WAN	Perform local-area network and wide-area network administration activities on the selected network operating system.
Operating System	Perform operating system administration activities on the selected operating system.
Web	Perform administration activities related to web infrastructure components, such as web server, application servers, search engines, etc.
Messaging	Perform administration activities on the selected messaging platform.
Security	Perform administration activities relating to security, auditing, and enforcement.
Emerging/Niche Technology	Perform administration activities on technologies that are emerging or unique to the organization.

For rate information, see Cost Data Sheets included with each Service Area packet.

WARRANTIES

Genova Technologies warrants that services will be provided in a workman like manner and meet or exceed accepted industry standards and practices. Genova will remedy, at no additional cost, any deficiencies attributable to the work performed by Genova within one (1) year of the date of final acceptance by the STATE of services performed under a specific PO if reported to Genova in writing by the STATE within thirty (30) days of the time the deficiency was first observed or should have been observed by the STATE.

This warranty shall not apply to any deliverable under a specific PO which

a) was modified at or by the STATE without Genova's consent,

b) which was operated outside standard conditions and operating requirements for the deliverable,

c) which was damaged due to conditions resulting from external causes, or

d) if identifying serial numbers or other similar identification has been removed from the deliverable.

Genova's liability for damages under this ITQ and any related PO shall be limited to the amount of the related PO, unless otherwise agreed to by Genova and the STATE.

SP's BACKGROUND / FINANCIAL QUESTIONAIRE

1. Identify each State in which the business operations or dealings of the (corporate or other type of entity) are subject to charter, registration, certification, licensure or regulation.
Genova is incorporated in the State of Iowa.

A) For each such State identified, state whether the business entity has been disciplined, admonished, warned, had its license, registration, charter, certification or any similar authorization to do business suspended or revoked for any reason (collectively "disciplined").
Genova certifies that this has not occurred.

B) If the business entity, its officers, agents or employees have been disciplined or disciplinary actions are pending in any State in which the business dealings of the entity are subject to regulation, identify the name of the regulatory agency with authority to discipline. In addition:
Genova certifies that this has not occurred.

2. In addition to the proceedings listed above (if any), are there any other pending administrative, criminal or civil proceedings against the business entity, its officers, agents or employees which relate directly or indirectly to the conduct of the business? If so,
No. There are no other pending administrative, criminal or civil proceedings against Genova.

3. Within the past three (3) years, has the prospective Vendor been sued by any person or entity for damages and/or injunctive relief in any state or federal court with respect to the prospective Vendor's collection practices in which the person or entity brought the primary action against the Vendor? (For purposes of responding to this question, do not include actions in which the Vendor initiated the primary action against a person or entity to recover monies, and the person or entity counterclaim against the Vendor asserting a claim based on statutory or common law unfair collection practices, unless such action resulted in a finding, judgment or settlement against the Vendor). If so, for each such matter,
Genova certifies that this has not occurred.

4. Within the past three (3) years, has the prospective Vendor entered into a settlement agreement, consent decree, or confession of judgment in lieu of litigation (or further litigation) with respect to the prospective Vendor's collection practices? If so, for each such matter,
Genova certifies that this has not occurred.

5. Within the past three (3) years, have any complaints been filed or lodged against the business entity, its officers, agents or employees with the Attorney General of any state, the Better Business Bureau of any state, the Consumer Affairs' Office (or similar nomenclature) of any state, the federal Trade Commission or any other federal agency which relate directly or indirectly to the conduct of the business? If so,
Genova certifies that this has not occurred.

6. Within the past five (5) years, state whether or not the business entity has filed a voluntary petition in bankruptcy, a voluntary petition to reorganize its business, or a voluntary petition to effect a plan or other arrangement with creditors. If so, explain the circumstances and the outcome of any such filing in detail.
Genova certifies that this has not occurred.

7. Within the past five (5) years, state whether or not the business entity has been the subject of a filing for involuntary bankruptcy. If so, explain the circumstances and the outcome of any such filing in detail.
Genova certifies that this has not occurred.

8. Within the past five (5) years, state whether or not the business entity has been notified that it is in default of its obligations under any contract. If so, provide a clear and concise statement of the reasons alleged to have occasioned the default and further state the manner in which the matter was resolved. If the matter is not yet resolved, state the issues that prevent resolution.
Genova certifies that this has not occurred.

9. Within the past five (5) years, state whether or not a contract has been terminated for non-performance or for any reason other than the natural expiration of the term of the contract. If so, provide a clear and concise statement of the reasons which occasioned the termination, and further provide the name(s), address(es), telephone and fax numbers of the key personnel in the organization which terminated its contract with you.
Genova certifies that this has never occurred.

10. Financial Information:
A) Each prospective Vendor shall provide its most recent audited financial statement or other information sufficient for the State to evaluate the financial condition of the prospective Vendor to insure that the Vendor has the capability to fulfill its obligations under the contract. A Dun and Bradstreet Report or similar well known credit report will suffice.
A copy of Genova's D&B Report is attached for your review.

B) Prospective Vendors may request that their financial statements and other financial information be kept confidential by the State. Prospective Vendors are required to provide only one copy of the audited financial statement.
Genova Technologies respectfully requests that all financial statements and other financial information, including the labor rates Genova offers to the State of Iowa be kept confidential.

C) Provide the name, address, telephone and fax numbers for one financial reference who can provide information relative to your financial responsibility.
Pat Deignan
Exec. VP, Sr. Loan Officer
Banker's Trust
221 Third Avenue SE
Cedar Rapids, IA 52406-0069
(319) 896-7792 (phone)
(319) 366-0509 (fax)

REFERENCES

Genova has sent Client Reference Survey Forms to the following customers:

Client	Company	Address	Project
Abe Hollander	Centers for Medicare & Medicaid Services (CMS)	7500 Security Lawn Blvd, Baltimore Maryland	CMS Blanket Purchase Agreement Task Orders 2 & 6; Chronic Care Improvement Program (CCIP)
June Rainbow	Rockwell Collins	400 Collins Road NE, Cedar Rapids, Iowa	Wireless LAN Manager (WLM)
Fran Amin	Iowa Dept. of Natural Resources	502 East Ninth St Des Moines, Iowa	National Pollution Discharge System Database (NPDS)
Gary Mills	Rockwell Collins	400 Collins Road NE, Cedar Rapids, Iowa	Cycle Time Reduction (aka “Spiderman”)

Additional letters of reference are attached for your review.

STATE OF IOWA

DEPARTMENT OF NATURAL RESOURCES

THOMAS J. VILSACK, GOVERNOR
SALLY J. PEDERSON, LT. GOVERNOR

PAUL W. JOHNSON, DIRECTOR

February 2, 2000

Dawn DeBoer
Engineering Manager
Computing Solutions, Inc.
6005 Rockwell Drive, NE
Cedar Rapids, Iowa 52402

RE: Feasibility Report on National Pollution Discharge Elimination System Database Migration

Dear Ms. DeBoer:

Thank-you for the outstanding work your team has done for the Department. The report your team produced is comprehensive, precise and to the point. Your team has met our requirements and needs. Recommendations offered by your team are sound and reasonable.

Your team has been professional, knowledgeable and customer-friendly throughout our association. Your team has established a positive working relationship with our staff. It has been a pleasure working with CSI. Your firm's contribution to our project will help protect the environment for the people of Iowa. Again thank-you.

Sincerely,

Gabe Lee, PE
Project Manger
Wastewater Section, Environmental Engineer Senior

Wayne Farrand, PE
Wastewater Section, Supervisor

WALLACE STATE OFFICE BUILDING / DES MOINES, IOWA 50319
515-281-5145 TDD 515-242-5967 FAX 515-281-8895 www.state.ia.us/dnr

From: Jacobs, Karen N. (CMS/CMM)
Sent: Thursday, June 08, 2006 4:11 PM
To: Kavanagh, Mary A. (CMS/OIS)
Cc: Brooks, Trish (CMS/CMM)
Subject: Genova

Mary,

I just wanted to send a quick note commending the performance of Genova, specifically Jim Poland, in developing the HCPCS Database Business Requirements documentation. Jim was professional, flexible, a problem-solver, and keep us on task. In addition to writing the requirements, he provided guidance and facilitated the process of developing business rules within our group. Despite several month-long delays where the HCPCS group was unavailable, Jim managed to deliver the requirements on time. Trish and I both feel that Jim has done an exemplary job in completing this task.

Karen

Sandra M Foote ♦ 5312 Hampden Lane ♦ Bethesda, MD 20814

March 15, 2006

Jim Poland
Genova Technologies
777 10th Street
Marion, IA 52302

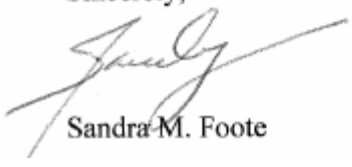
Dear Jim:

I have been meaning for weeks to thank you and Dawn formally (though no longer officially) for the outstanding work you are doing on system integrity for Medicare Health Support. Having resigned as Senior Advisor, Chronic Care Improvement from the Centers for Medicare & Medicaid Services in late December, you would think I would have tied up all the loose ends by now, but this initiative gets into your blood. For example, I just made a presentation at the Robert Wood Johnson Foundation earlier this week to tell them how their investment in collaborative strategic planning for Medicare Health Support in 2002-2004 is playing out. It was a real pleasure to be able to tell them that it is off to an impressive start with all 8 pilot programs launched and more than 100,000 confirmed participants. The people served by Medicare Health Support are all chronically ill people, most elderly and many poor, as you know. I think we are just beginning to see the many ways Medicare Health Support programs can help Medicare beneficiaries like these manage their self-care and know when to seek medical care to avoid complications and emergencies. The potential is tremendous and the need is obviously great. I predict national expansion, improving patient care and population health for literally millions of people in the next few years.

All of that brings me back to why I have been thinking about Genova Technologies. One of the most important decisions I believe we made in infrastructure development was to bring you and Dawn in to help. Elyse Pegler and I were consistently impressed (blown away, actually) by your ability to assimilate masses of information from different quarters and spot system design gaps and miscommunications among the various support contractors. One instance that pops to mind was when you discovered differences in eligibility definitions across contractors. That's a problem! And I'm sure you will keep uncovering many more, as CMS strives to knit together disparate systems for eligibility tracking, payment, and performance monitoring. You also did a masterful job of winning all parties over to the realization that thorough documentation is a necessity, not a nicety.

Thank you so much for all you are doing. It gives me great confidence to know you are in the thick of systems development. In my book, Genova Technologies rocks!

Sincerely,



Sandra M. Foote

July 8, 2005

Dear Ms. McHale Allison:

From November 1995 to my retirement on July 31st, 2003 I served as Chief Information Officer for the Navy Exchange Service Command (NEXCOM) headquartered in Virginia Beach, Virginia. The Headquarters in Virginia Beach serves as the focal point for the worldwide operation of NEXCOM's Network and Information Technology Systems. NEXCOM operates 132 Exchanges worldwide ranging from Singapore in the South Pacific to Japan in the North Pacific to Iceland, England Italy, Portugal and Spain in the Atlantic as well as numerous Exchanges in the United States. During my tenure at NEXCOM we focused on the modernization of our Information Systems and the refinement of our Worldwide Network to insure reliable operation and redundancy where appropriate. We, at my retirement, were evaluating the implementation of Voice over Internet Protocol (VoIP) as a cost saving feature for voice communication with our exchanges and District Offices worldwide.

A key player in the modernization of our systems were Genova Technologies of Marion, IA. Genova Technologies is a small business which in our case worked to our advantage. Their location in Mid America gives them an extremely stable work force of very talented people who are enthusiastic, energetic, bright and hard working.

Having worked for the Department of Defense for 40 years of which 36 were in Information Technology I have worked with many companies large and small. I have had very good and very bad experiences with both large and small companies.

Genova Technologies is one of those very good small companies. Their principle MS. Dawn Ainger is not only a very capable and respected manager she is also a very capable and talented technologist. She knows the business side of the business and she knows the technology side of the business.

I recommend this company and its fine staff to you without reservation.

Should you require further information from me you may reach me by return e-mail or you may contact me at 307-587-6709.

Thank you.

Sincerely

William F. Finefield, CDP

NON-COLLUSION AFFIDAVIT

I, the undersigned, am the person responsible for the preparation of and cost data contained in this response submitted to the STATE in response to this ITQ and certify that:

Cost data has been arrived at independently and without consultation with any other party.

No information regarding this response content has been disclosed to any other party that may be or may potentially be responding to the ITQ with a response.

No attempt has been made to induce or to refrain any other party in responding to this ITQ or to influence the content of their response.

This response and subsequent proposal(s) submitted by my firm to RFPs referring to this ITQ is made / will be made in good faith and not pursuant to any discussions / agreement with any other party.

My firm and its affiliates, subsidiaries, officers, directors and employees are not currently under investigation or been convicted for any act prohibited by federal law involving conspiracy or collusion with respect to bidding on public ITQ and related POs, except as follows:

_____
_____
_____
_____

I understand that any miss-statement in this affidavit is and shall be treated as fraudulent concealment from the STATE of the true facts relating to the response submission for this ITQ.

Name: __Vicki Rocho_____, Position : __Marketing Manager_____

SIGNATURE: _____ Date : _____

Representing COMPANY NAME: __Genova Technologies_____

SWORN TO AND SUBSCRIBED BEFORE ME THIS DAY _____ OF 20 _____.

NOTARY PUBLIC _____ My commission expires: _____

LOBBYING CERTIFICATION FORM

FOR ITQ AND RELATED POSS, GRANTS, LOANS, AND COOPERATIVE AGREEMENTS

The undersigned certifies, to the best of her or his knowledge and belief, that

No federal appropriated funds have been paid or will be paid, by or on behalf of the undersigned, to any person for influencing or attempting to influence an officer or employee of any agency, a member of Congress, an officer or employee of Congress in connection with the awarding of any federal contract or agreement, or the making of any federal grant, loan, or co-operative agreement.

If any funds other than federal appropriated funds have been paid to any person for influencing or attempting to influence the making of federal contracts or federal grants, loans, co-operative agreements, the undersigned will submit full disclosure of lobbying activities showing all details and supporting documents.

The undersigned will require any or all subcontractors to submit a separate lobbying certification and disclosure accordingly.

SIGNATURE: _____ TITLE: _Marketing Manager

COMPANY NAME: __Genova Technologies_____ DATE: _____

MANDATORY AGREEMENT QUESTIONNAIRE

This section consists of a series of questions that must be answered to the affirmative prior to proceeding with development of your response. It confirms your understanding of and agreement to our requirements for submitting a response. Negative responses will disqualify you. Please insert a copy of your answers inside each of your responses.

		Yes	No
1	Do you agree that the contents of your proposal(s) will become part of any resulting ITQ and related POs and cannot be held confidential?	**X**	
2	Do you agree to submit one original of your proposal, together with two (2) copies and an electronic soft copy on diskette?	**X**	
3	Will you include at least three (3) client references and agree you must attain acceptable scores from references for each service category you are attempting to qualify for?	**X**	
4	Do you agree that you must maintain an acceptable rating by each agency you do work for in order to remain pre-qualified for each service category?	**X**	
5	Do you agree to abide by agency specific requirements as outlined in section 1-25?	**X**	
6	Do you agree that your response will remain valid for at least 120 business days and duration of ITQ and related POs?	**X**	
7	Are you a TSB or do you currently have or have had a contracting role in three (3) projects for each of the categories you are attempting to qualify for?	**X**	
8	Do you agree that if the STATE finds any part of your response to be false, you will be placed on temporary suspension from doing business with the STATE?	**X**	
9	Do you accept the requirements stated in sections 1-19 and 1-21?	**X**	
10	Will you provide all documents of proof of insurance as required by this ITQ and any related POs?	**X**	
11	Are you aware that the STATE will conduct any and all background checks it deems necessary?	**X**	

COMPLETED BY ___Dawn Ainger_____

REQUIRED SIGNATURE PAGE

(submit two signed originals in your response)

I / we as undersigned agree to the terms and conditions of the aforementioned ITQ #BD80200S102 and if our response is accepted, to furnish any and all services upon which cost data has been submitted. Any material misstatement in our response shall be treated as fraudulent concealment from the STATE of the facts relating to this ITQ.

Name of Entity / Person Submitting Proposal: __Vicki Rocho_____

Mailing address: Genova Technologies 5250 N River Blvd. NE, Cedar Rapids, Iowa 52411

Phone: _(319) 378-8455_ Fax: _(319)378-8457_ Email: _vicki.rocho@genovatech.com_

❑ If Individual: SIGNATURE: _____Date: _____

Social Security Number: _____

❑ If Partnership: Names -type written: _____/_____

Social Security Numbers: _____/_____

SIGNATURES of PARTNERS: _____ Date: _____

_____Date: _____

☒ If Corporation: Corp ID# __42-1466298_____ State: __Iowa____

SIGNATURE: _____ Date: _____

Name and Title -type written: Vicki Rocho, Marketing Manager_____

I / we consent to service of process by certified or register mail addressed to our designated agent as required by Part 5-13-i of the Terms and Conditions of the ITQ. I / we appoint

Dawn Ainger at 5250 N. River Blvd NE, Cedar Rapids, IA 52032 as our agent to receive service of process.

WITNESS SIGNATURE: _____ Title:_____ Date: _____

The STATE of Iowa, acting through the undersigned officer(s), hereby accepts the foregoing response to the ITQ and pre-approves the SP named for agency requests for proposals using this agreement. This acceptance and the SP's response for the above referenced ITQ and related POs, including the terms and conditions of the ITQ constitute a binding contract between the STATE and the SP.

CT _____ Vendor ID# _____ ☐ CONDITIONAL TSB

Evaluation Committee Chairperson _____ Date: _____

DGS Purchasing Div. Administrator: _____ Date: _____

Purchasing Agent / Issuing Officer : _____ Date : _____

AMENDMENT #1 ACCEPTANCE

Acceptance of Amendment #1 to ITQ BD80200S102, version 1.0

Note: The same person who signed the original response to the ITQ must also sign below to accept this amendment to the ITQ.

I, **Dawn Ainger, President** of **Genova Technologies** Hereby accept and agree to

Amendment No. 1 to the ITQ, BD80200S102, version 1.0 and agree to provide the

additional requested information in the amendment.

Signature: _____ Date: _____

Signature for the State: _____ Date: _____

Upon signing, the aforementioned amendment is immediately incorporated into the ITQ and service provider's response to the ITQ.

Submit Two (2) Originally signed copies to:

Ms. Ashley Super, Purchasing Agent III
Iowa Department of General Services (DGS)
Hoover STATE Office Building - Level A
Des Moines, IA 50319-0105